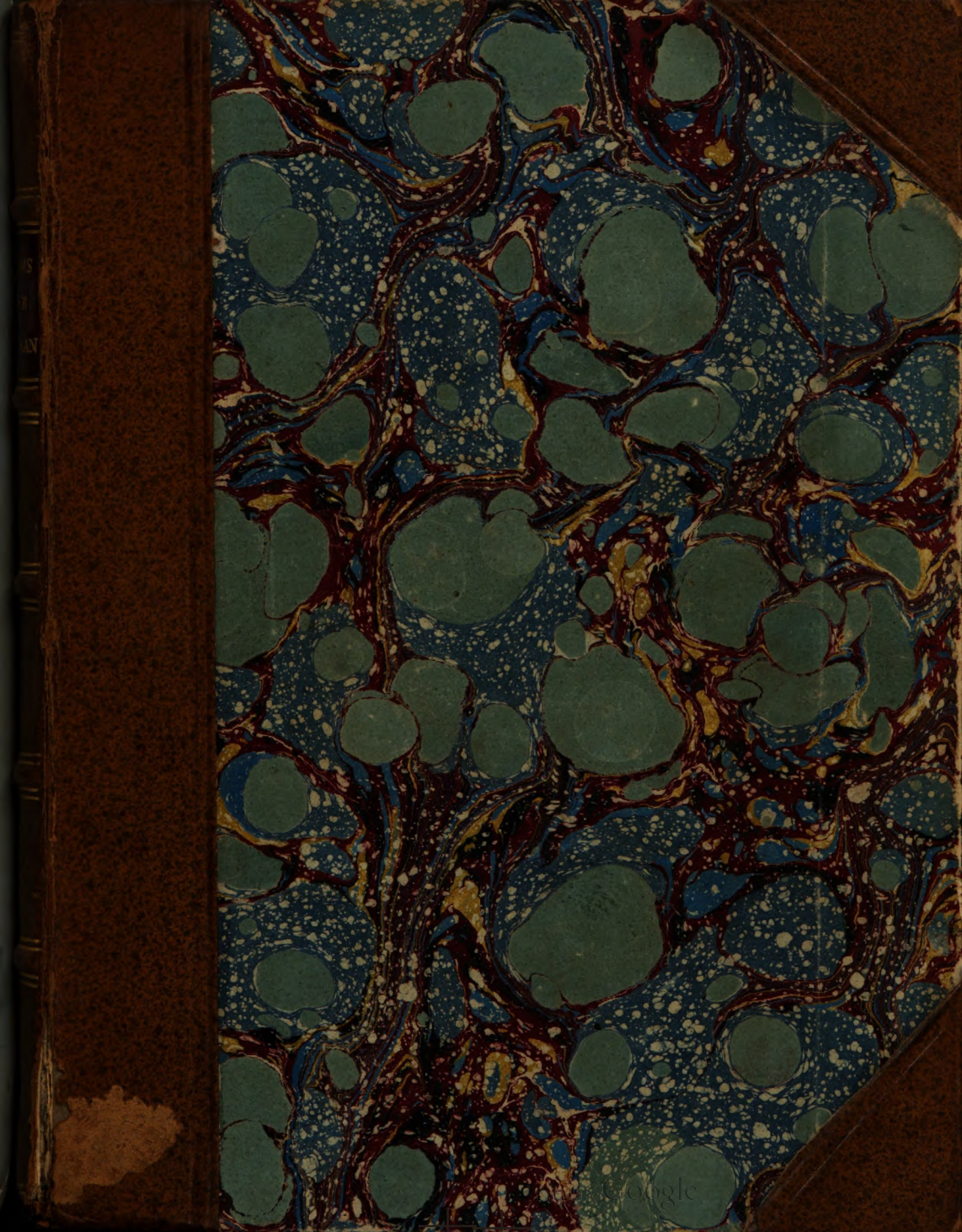

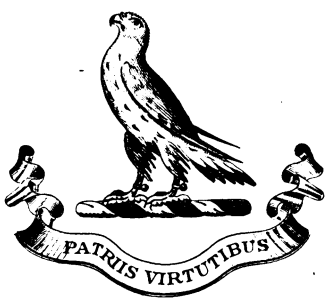

Henry J. B. Clements.

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Principle. Mint - Worth with Ann 18

Bibliography - Thin Old Leaves

~~Reading~~ Ledger

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23 Feb — 20 Feb

51 Books - Folio in with a fine marbled Back

130 Spel. Husbandry

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196 Waste - for Middle

42. 30 Chebole. [illegible] Capsule. Candle, a Light Coate or Chebole

42. 18 Mint. [illegible] Vitus Marbulorum.

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THE English Husbandman,

drawne into two Bookes, and each Booke into two Parts.

The First Part

Contayning the knowledge of Husbandly Duties, the Nature of all sorts of Soiles within this Kingdome, the manner of *Tillage*, the diversity of *Ploughes*, and all other *Instruments*.

The Second Part

Containing the Art of *Planting*, *Grafting*, and *Gardening*, the Vse of the *Vine*, the *Hopgarden*, and the Preservation of all sorts of *Fruits*, the Draught of all sorts of *Knots*, *Mazes*, and other *Ornaments*.

Newlie Reviewed, Corrected, and Inlarged by the first Author,

G. M.

London
Printed for *Henry Taunton*, and are to be sold at his Shop in Saint *Dunstans* Church-yard in Fleetstreet, 1635.

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TO THE HIGH AND MIGHTY PRINCE

IAMES STVART,

Duke of *Lenox*, Earle of *March*, Lord *Darnly*, *Methuen*, *St. Andrewes* and *Aubigni*, Admirall and Chamberlain of *Scotland* by Inheritance, Gentleman of His *Majesties* Bed-chamber, Knight of the most Noble Order of the Garter, and one of His *Majesties* most Honourable Privie Councell.

SIR,

HOwsoever, or whensoever these poore Gatherings shall come to kisse Your *Graces* Hands, I know they must necessarily appeare Strangers, both in respect of My selfe and the Subject; The first being but a Remembrancer of Your Birth, the other a Treatise below Your Meditation: Yet, Gracious *Sir*, bee

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pleaſed to let me plead this, both for it and mee; That when I was a Servant to Your noble Anceſtour, and had houres to beſtow on my owne Studies, then at *Layton*, I firſt thought of this Worke, there I made proofe of every Doubt in the Worke, and there I finiſht whatſoever I found perfect within mine Experience; Since when (not being willing to loſe any meanes that might amplifie profitable Beginnings) I have gathered other Principles; All which I have inſerted, and doubt not, but the Worke is now able to give ſatisfaction to all thoſe which ſhall queſtion it, and by many degrees the more, If Your *Grace* ſhall be pleaſed to throw one glimpſe of your Gracious Favourable Acceptance upon it: In which hope I reſt

Your *Graces* Servant

Gervaſe Markham.

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THE EPISTLE
to the generall and gentle READER.

Although (generall Reader*) the nature of this worſt part of this laſt Age hath converted all things to ſuch vildneſſe, that whatſoever is truely good, is now eſteemed moſt vitious, Learning being derided, Fortitude drawne into ſo many Definitions, that it conſiſteth in meere words onely; and although nothing is happy or proſperous, but meere faſhion and oſtentation, a tedious fuſtian-tale at a Great mans Table, ſtuft with big words, without ſenſe, or a mimicke Ieſter that can play three Parts in one, the Foole, the Pandar, and the Paraſite; Yet notwithſtanding in this Apoſtate Age I have adventured to thruſt into the World this Booke, which nothing at all belongeth to the ſilken Scorner, but to the plaine ruſſet honeſt Husbandman, for whoſe particular benefit and the Kingdomes generall profit, I have with much Paine, Care, and Induſtry, paſſed thorow the ſame. Now for the Motives which firſt drew me to undertake the Worke, they were diverſe: as firſt, when I ſaw one man*

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man translate and paraphrase most excellently upon Virgill's Georgickes, *a Worke onely belonging to the Italian Clime, and nothing agreeable with ours, another translates* Liébault *and* Stevens, *a Worke of infinite excellencie, yet onely proper and naturall to the French, and not to Vs: and another takes collections from* Zenophon, *and others; all Forrainers and utterly unacquainted with our Climes: when this I beheld, and saw with what good liking they were entertained of all men; and that every man was dumbe to speake any thing of the* Husbandry *of our owne kingdome, I could not but imagine it a Worke most acceptable to men, and most profitable to the kingdome, to set downe the true manner and nature of our right English* Husbandry, *our Soyle being as delicate, apt, and fit for increase as any Forraine Soyle whatsoever, and as farre outgoing other kingdomes in some commodities, as they Vs in others. Hence, and from these considerations, I beganne this Worke, of which I have here sent thee a taste, which if I finde accepted, according to mine intent, I have my wish.*

Now whereas there were some errours and mistakings in the first Edition, you shall understand they are now purged and amended, and the Worke I hope made sufficient to give satisfaction to any charitable Iudgement.

Thine

G. M.

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THE FIRST PART OF THE FIRST BOOKE OF THE English Husbandman.

Containing the manner of Ploughing and Manuring all sorts of Soyles: Together with the manner of Planting and Setting of Corne, the choyse of Seede for every Soyle: the manner of Harvest, and getting it in.

CHAP. I.

The Proem of the Author. What a Husbandman is: His Vtilitie and Necessitie.

IT is a common Adage in our English speech, that a man generally seene in all things, can be particularly perfect in none: Which Proverb there is no question will both by the curious and envious be heavily imposed upon my backe, because in this, and other workes, I have dealt with many things of much impor-

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importance, and such as any one of them would require a whole lyves experience, whereas neither my Birth, my Education, nor the generall course of my life can promise any singularity in any part of those Arts they treate of: but for suggestions (the liberty whereof the wisedome of Kings could never bridle) let them poyson themselves with their owne gall, they shall not so much as make me looke over my shoulder from my labour: onely to the courteous and well meaning I give this satisfaction, I am but onely a publique Notarie, who record the most true and infallible experience of the best knowing Husbands in this Land.

Besides, I am not altogether unseene in these mysteries I write of: for it is well knowne I followed the profession of a *Husbandman* so long my selfe, as well might make me worthy to be a Graduate in the Vocation; wherein my simplicitie was not such, but I both observed well those which were esteemed famous in the profession, and preserved to my selfe those rules which I found infallible by experience. *Virgill* was an excellent Poet, and a Servant of trusty account to *Augustus*, whose Court and study-imployments would have said, he should have little knowledge in rurall businesse, yet who hath set downe more excellently the manner of Italian Husbandrie then himselfe, being a perfect lanthorne, from whose light both *Italie* and other Countries have seene to trace into the true path of profit and frugality? *Stevens* and *Libault*, two famous Physitians, a profession that never medleth with the Plough, yet who hath done more rarely? nay, their works are utterly uncontrolable touching all manner of French Husbandry whatsoever; so myselfe, although by profession I am onely a Horse-man, it being the predominant outward vertue I can boast of, yet why may not I, having the sense of man, by the ayde of observation and relation, set downe all the Rules and Principles of our English Husbandrie, in as good and as perfect order as any of the former? There is no doubt but I may, and this I dare boldly

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assure unto all Readers, that there is not any rule prescribed through this whole Worke, but hath his authoritie from as good and well experienced men, in the Art of which the Rule treateth, as any this Kingdome can produce: neither have I beene so hasty, or willing, to publish this part as men may imagin, for it is well knowne it hath laine at rest this many yeeres, and onely now at the Instigation of many of my friends is bolted into the world, to try the censure of wits, and to give ayde to the ignorant *Husbandman*. Wherefore to leave off any further digression, I will fall to mine intended purpose: and because the whole scope of my labour hath all his ayme and reference to the English *Husbandman*, I will first shew you, what a *Husbandman* is.

A *Husbandman* is hee which with discretion and good order tilleth the Ground in due seasons, making it fruitfull to bring forth Corne, and Plants, meete for the sustenance of man. This *Husbandman* is hee to whom God in the Scriptures giveth many blessings, for his labours of all other are most excellent, and therefore to bee a *Husbandman* is to be a good man; whence the Auncients did baptise, and wee even to this day doe seriously observe to call every *Husbandman*, both in our ordinary conference and every particular salutation, Goodman such a one, a title (if wee rightly observe it) of more honour and vertuous note, then many which precede it at feasts and in gaudie places. The definition of a Husbandman.

A *Husbandman* is the Master of the earth, turning sterilitie and barrainnesse, into fruitfulnesse and encrease, whereby all Common-wealths are maintained and upheld, it is his labour which giveth bread to all men, and maketh us forsake the societie of beasts drinking upon the water springs, feeding us with a much more nourishing liquor. The labour of the *Husbandman* giveth libertie to all Vocations, Arts, Mysteries and Trades, to follow their severall functions, with peace and industrie; for the filling and emptying of his Barnes is the encrease and pro- The Vtilitie of the Husbandman.

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sperity of all their labours. To conclude, what can wee say in this world is profitable where Husbandry is wanting, it being the great Nerve and Sinew which holdeth together all the joynts of a Monarchie?

Of the necessity of Husbandmen.

Now for the necessity, the profit inferreth it without any larger amplification: for if of all things it be most profitable, then of all things it must needs be most necessary, sith next unto heavenly things, profit is the whole aime of our lives in this world: besides, it is most necessary for keeping the earth in order, which else would grow wilde and like a wilderneſſe, brambles and weedes choaking up better Plants, and nothing remaining but a Chaos of confusednesse. And thus much of the *Husbandman* his Utility and Necessity.

CHAP. II.

The duties and vertues appertaining to the Husbandman.

HAving shewed you the Definition, Utilitie, and Necessitie of the *Husbandman*, it is fit I proceed now to some particular duties and vertues, which ought to accommodate and adorne both his body and his minde, for without some especiall endowments, let his labour be never so great, his knowledge and skill never so deepe, his Reputation never so renowned, yet hee shall finde want in divers prosperities.

Who is a Husbandman.

First therefore let every man understand, that this title of *Husbandman* is not tyed onely to the ordinarie Tillers of the earth, such as we call *Husbandmen*; In *France* Pesants, in *Spaine* Besonyans, and generally the Clout-shoo: No, they are creatures of a better creation; for as *Adam* was the first *Husbandman*, so all the sonnes of *Adam* (even from the Crowne to the Cottage; how excellent so ever, if they be excellent indeed,) cannot assume a greater, a better or richer title, then to be a Good-Husband, and where the

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the contrary is fixt to the Monument, there the life endeth in scandall.

Then sith our *Husbandman* is so good, so great; it is necessarie that hee be adorned with all the qualities both divine and morall, which may any way beautifie and illustrate his calling; into the particulars, whereof I will not enter, because it is a pitch too high, and a field too spatious; I will onely touch at some few necessities, and under them leave to your considerations the worth of greater vertues.

First therefore there is nothing more requisite in an *Husbandman*, then acquaintance with labour and abilitie to endure labour; for I never read but of one rich Sluggard, and he perished the first night hee tooke his rest; let our *Husbandman* then know labour, and apply himselfe to labour. I doe not meane servile and painefull labour, which shall either disable the body, or torment the minde; but such labours as are requisite and necessarie for his calling, as the labour of his eyes in visiting and beholding his affaires, in apprehending the good and evil actions of his Servants, in finding out wants, and repairing them, and in shewing to others what they ought to performe in their severall places; the labour of his hands in distribution of things necessarie, wanting, or behoovefull; in assisting and encouraging, or in restraining or detaining things lavish or misapplied: The labour of his feet; in walking about his Pastures, Medowes, Woods, Commons, and Tillage; in measuring lengths and breadths, which leades to the assured knowledge of profit, and in meeting with mischances, or else preventing them by an early encounter: Lastly, the labour of the minde, as in fore-casting affaires to come, providently; in mannaging affaires present, discreetly, and in preserving those which are past from deserved controlment.

Labour requisite in an Husbandman.

Next, hee ought to have skill in his profession, for to endevour is not sufficient, *Good-will* is an honest Servant, but it is true knowledge that arives at perfection; neither must his skill be imaginarie or grounded upon ostentation, but reall and approveable with the best judgements; for how-

He must have skill in Husbandrie.

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soever *advise* be an excellent Handmayd, yet is true Judgement a better Master; for having that, there is nothing profitable but is easily discernable, so that he is able by his owne discourse, to ranke all things in their true order; hee shall then know what grounds are fit for the Plough, what for the Sythe, and which for Pasture; what for high Woods, what for Vnderwoods, what for Inclosure, and what for Common: He shall then be able to informe himselfe what is fit for his owne use, and what for others occupation, what he shal keepe in his own hands, and what he shall farme out to other men; & then this there is not a better knowledge, for many men have broken their owne backes in coveting to carrie too much gold: Besides, this skill in his profession will breede a singular love and delight, onely to pursue and follow the profession: as on the contrarie part it will stirre up a neglect and contempt of other vanities, by what great name or title soever they be baptized, especially it will make him peaceable, and an hater of Law-suites, because it is the wise mans rule, that every *Husbandman* is bound to follow his affaires and not contentions.

Hee must be courteous.

Next to this matter of skill, he shall joyne an affable and courteous nature, as well for his owne renowne as others example. This affability as it is tyed generally to all men, so it is bound particularly to his owne family, for it sufficeth me not to be good abroad, but I must be excellent at home: I must not toy onely with my wife and children, but I must also play with my Servants, and there is not a more excellent cariage of Masters unto their Families, then sweetnesse and discreete affability; for all men cannot endure roughnesse, since out of harshnesse proceeds more rebellion then good obedience; And the Wiseman tells mee, *That to hasten servants too speedily, is the losse of profit certainly.* Therefore the conclusion must needes follow, *That courtesie is no hindrance to Vtility*; yet must this *affability* and *courtesie* be bounded within a moderate circumference; for to overflowe, it not onely drowneth all the vertues bordering upon it, but pulls in with it and upon it, *contempt*, the hatefullest

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fullest companion which can accommodate any vertuous creature. Servants generally will performe too little, yet it is reputed an error in the Master to exact too much; therefore Moderation is an excellent Umpire betwixt them, and the obscure forbearance of the one, will make the other struggle to excell in requitall. Neither must this courtesie be confined to one place, as to the Yard, the Garden, the Field, the Pastures, or places of severall & necessarie use of labour, but to other places of frequence and commerce, as the House, the Chamber, and the Table: the first to his Servants and Creatures, the second to his Wife and Children, and the last to Strangers: And indeede so much doth the Lord of *Montaigne* commend cheerefull affability at the Table, that hee saith every man is bound to make himselfe a Foole at meale times for the Recreation of those hee entertaineth; the limitation whereof, how farre it boundeth, no wise man but knowes without an Expositor. Let it suffice then that our *Husbandman* be in a true measure, courteous without any overflowe of kindnesse, or ingagement by hyperbolike complement, and affable without hautsing or kissing, or the vanity of repentant promises.

Next to these vertues I joyne Sobriety and Discretion; the first is a Champion that will ever defend him from Rashnesse, the other a Bulwarke that will stand impregnable against all the assaults of Folly; and beleeve it, without these there can be no good man, no *Husbandman*, no Man to teach others Thrift by his example; for these are called the Salt of profit. These season and make out Actions wholsome, these rellish and make us taste with pleasure things that are unpleasant, and these preserve and give to things a kinde of eternity, which otherwise would turne to dung and putrifaction. These two whosoever holds as inseperable Companions, shall hardly erre in his progresse, or stand amazed at any turning *Meanders*: These will teach him the knowledge of himselfe and others, how to Construe and Parce men, and by that meanes to come to the understanding of the most difficult Natures.

He must be Sober and Discreete.

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Election of Friends,

These must be our *Husbandmans* Friends to teach him how to make election of Friends; and then this, there is not an harder lesson; out-sides are so false: Insides so guilded, and soules themselves so transmigrated & transformed: Therfore I would have our *Husbandman* to joyne Divinity and Philosophie together; that is, to be truly charitable to all men, but singularly affected to a fewe particulars; to throwe away intimate love too lavishly, is to affect no man sincerely, for Love is compos'd of a jealous substance, and neither holds faire quarter with Generality nor Plurality; therefore in the election of his Intimates, let him chuse those which are Religious towards God, honest towards men, and profitable to themselves and others.

Election of Servants.

When he hath learnt how to elect Friends, the same Rule will teach him how to elect Servants; and though there be divers mysteries in this kinde of election, because Servants were never so subtill, never so shallow, never so slowe to any good performances, yet in as much as the Master hath the advantage of alteration and mutation (for Services must not be Inheritances, though a good Servant is worthy to be a long-lyved Tenant) there is lesse fault in the Servants error then in the Masters election; therefore it is meete (as neere as he can) to chuse an honest Servant, a faithfull Servant, a lover of his Masters profit, but above all things an hater of drunkennesse, which we call good fellowship.

Of Writing and Reading.

Lastly, touching the Masters knowledge in the seaven liberall Sciences, or in generall learning, howsoever some of our best Teachers holds it a thing unnecessarie; and rather burthensome then profitable, saying, *Writing and Reading are unnecessarie in the Husbandman:* Yet I am of another opinion, and thinke as touching the Master of the Family himselfe, learning can be no Burthen; for *Vertue* was never found unprofitable, and questionlesse *Ignorance* was ever an evill Schoole-mistresse. But if we speake as touching some especiall Servants in Husbandrie; as the Bayliffe, the Under-farmer, or any other ordinarie Accountant: then for these vertues of Writing and Reading, it is not much

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much materiall whether they be acquainted therewith or no, for there is more truſt in an honeſt ſcore chaulkt on a Trencher, then in a cunning written ſcrowle, how well ſo ever painted on the beſt Parchment. Writing will helpe a weake Memorie: but a weake Memorie without Writing will ſoone diſcover Falſhood. I had rather be my Mans *Amanuenſis* to regiſter his Truthes, then a Witneſſe of his Learning in finding out falſe Reckonings. And there is more Benefit in ſimple and ſingle Numeration in Chaulke, then in double Multiplication, though in never ſo faire an hand written. Therefore let our *Husbandman* not ſtand much on his Mans Writing or Reading, but rather rely upon his Uprightneſſe and Integritie; for the one may be falſified and corrupted, the other if it be ſound will hardly be ſhaken. A world of other Attributes, Adjuncts, and Adviſes might be reckoned up, to accommodate our *Husbandman*; but theſe already ſpoken of are ſo neere alyed unto them, that it is impoſſible to be familiar with them, and to loſe the others acquaintance.

CHAP. III.

Of other vertues, as namely; How the Husbandman ſhall judge and fore-know all kinde of Weathers, and other Seaſons of the Yeere.

ALthough God out of his infinite providence, is the onely directer and ruler of all things, governing the yeeres, dayes, minutes, and ſeaſons of the yeere, according to the power of his Will: yet for as much as he hath given us his Creatures, and placed the Celeſtiall bodies to hold their influences in us, and all things elſe which have increaſement, revealing unto us from their motions, the alteration and qualities of every Seaſon, it ſhall be very behoovefull for every *Husbandman* to know the ſignes and tokens of every particular Seaſon, as when it is likely to Raine, when Snow,

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when Thunder, when the Winds will rise, when the Winter will rage, and when the Frosts will have the longest continuance, that fashioning his labours, according to the temperature or distemperature of the weather, he may with good judgemtnt and advise, eschew many evils which succeede rash and unfore-looking actions.

Of Rayne. Signes from Clouds.

To speake then first of the generall signes of Raine, you shall understand that the old *Husbandmen* did observe rules generall, and rules speciall: the generall rules were such as concerned either all, most, or a great part of the whole yeere: the rules speciall, those which concerned dayes, houres, and times present: of which I will first speake in this place.

Signes from the Moone.

If therefore you shall at any time perceive a Cloud rising from the lowest part of the Horizon, and that the maine body be blacke and thicke, and his beames (as it were) Curtaine-wise, extending upward, and driven before the Windes: it is a certaine and infallible signe of a present shower of Raine, yet but momentary and soone spent, or passed over: but if the Cloud shall arise against the Winde, and as it were spread it selfe against the violence of the same, then shall the Raine be of much longer continuance.

Signes from the Sunne.

If when you see the new Moone appeare, you perceive that some part of her Hornes are obscured, or if it be black, or discoloured in the middest: if it hang much to the West, if it be compast or girdled about, either with thicke, or wateriſh transparent vapours: if it looke more then ordinarily pale, or if it shall begin to raine small and mist-like on the fourth or fift day of her age, all these are infallible signes of Raine, and the last an assured signe that the Raine will continue all that quarter of the Moone following.

If you shall see the Sunne rise early in the Morning, and spread forth his Beames violently, yet with a very moyst and wateriſh complexion, and there-withall in the West you doe see a bedde of thicke vapours to arise, increase, and ascend upward, then shall you bee assured that at high

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high noone; when those vapours and the Sunne shall meete, there will bee Raine, and that Raine of no short continuance: If you shall see the Sunne rise red, and turne sodainly blacke, if it have many red clouds about it mixt with blackenesse, if it have a spacious Circle about it, or if when it setteth you see it fall behinde a banke of darke and blacke Cloudes, they bee all most certaine and infallible signes of Raine, which will presently follow.

If it lighten at noone, or any time whilest the Sunne shineth, either with Thunder or without Thunder, or if it lighten in faire weather, or if it lighten more then it thundereth, all are most certaine signes of raine which will follow. *Signes from the Lightning.*

If you shall perceive water-Fowle to bathe much: if the Crow wet her head at the water brimme, or if shee wade into the water, or if shee shall cry and call much: if the Raven shall croake with a hollow or sounding voyce: if the house-Cocke shall crow at all houres: if Pigions shall come home late to the Dove-house: if Sparrowes shall chirpe and cry early in the morning: if Bees flye not farre from their Hyves: if Flies and small Gnats bite sharpe and sore, all are most certaine signes of raine, which will presently follow. *Signes from Fowle.*

If you shall perceive your Oxen to eate more greedily, and with a more earnest stomacke then their usuall custome: if your Kine gaze and looke much upward: if Swine shall play and gambole up and downe: if Horses being at grasse shall scope, course, and chase one another: or if the Cat shall wash behinde her eare, all are certaine signes of raine to follow. *Signes from Beasts.*

If Salt turne moyst standing in dry places, if Channels, Vaults, and common Sewers stincke more then usuall: if Bels seeme to sound lowder then they were wont: if the Tazell at any time close up his pricks: if Soote fall much from the Chimney: If oyle shall sparkle much when it burneth, or if Marble, Paving-stone, or other walls *Signes from things without motion.*

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shall sweat, or be much moyst, all are most inevitable signes of raine which will follow.

Signes of much Raine.

If Raine, when it falleth, make great bubbles, or such a noyse as is not ordinary: or if raine fall mildely, small, and mist-like; or if raine fall in a calme when no winde stirreth: or if when it raineth, you cannot perceive the Rack or Clouds to move: if Pullen flye to their roust assoone as the raine begins: if the Raine-bow stretch towards the South, or if it doe reflect and sheedoole: if you shall see one or more Weather-galls which are like Raine-bowes, onely they arise from the Horison but a small way upward, all these are most certaine signes of much raine that will follow.

Signes of Snow or Haile.

If black Clouds shall turne sodainly white: if about either the Sunne or Moone be pale and waterish Circles, or that they seeme to shine as through a mist: if the Ayre be thick and extreame cold without frosts: if with the signes of raine be mixt signes of cold also, or if windes be nipping and extreame sharpe, all are most certaine tokens that Snow or Hayle will follow presently after.

Signes of winde.

If when the Sunne setteth it looketh red and fiery, and that all that part of the Horizon looke red also, or if it looke blewish, or seeme greater then his ordinary proportion: If the Moone doe blush or looke high coloured, if the Racke ride high, and the Firmament be much vaulted: if Woods and Hils seeme to make a noyse: if the Starres seeme to shine brighter then usuall: if it shall thunder in Winter, or if it thunder without lightning: if Bels be heard farre off with more ease then accustomed, and presently in the same instant be not heard at all: If Cobwebs flye much in the ayre: If Hernes or Heronshoes cry much in their flying: If fire sparkle much, or if Wood or Wainscot crack much, all these are most certaine signes of much winde that will follow after.

Signes of tempests.

If you shall perceive the Morning or Evening Sunne, either in the Summer or in the *Autumne*, to shine hotter, or to scorch more then accustomed, when the ayre is prest with

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with an extreame blacke cloude, or with many clouds, if you perceive whirle-windes to blow oft and violently: if you see the Raine-bow shall appeare in the West without raine: if you see flames and meteors flashing in the ayre, or if the Porpus shall be seene in the fresh River, all are most certaine signes of thunder, lightnings, and tempests, which will follow.

If the Sun rise gray and cleare in the morning, and likewise setteth without darknesse, not losing a minute in the declination: if the evening skie be ruddy and not fierie, more purple then skarlet: if the Moone be cleare when it is foure or five dayes olde: if it lighten after Sun-set without thunder: if the dewe fall in great abundance, and in the rising ascend up to the mountaines: if the North winde blow strong: if the Owle doe whup much and not scrytch: if Flyes at night play much in the Sunnes beames: if Crowes flocke much together, and cakell and talke: if Bats flye busily up and downe after Sunne-set, if you see Cranes flye high, and water-Fowle make their haunts farre off from the water; all these are most certaine signes of very faire weather which will follow after. *Signes of faire weather.*

If water-Fowle forsake the Water: if the Nightingale sing more then other Birds: if Cranes flocke together: if Geese fight for their feeding place; or if Sparrowes call very early in the Morning, any of these are certaine signes that Winter is neere at hand. *Signes of Winter.*

If the West winde blowe freshly Morning and Evening: if the colde abate and lose much of his vigour, if Swallowes begin to come in and flye busily about, if the brest-bone of the Mallard or Woodcocke looke white and cleare, any of these are certaine signes that the Spring is at hand. *Signes of the Spring.*

If the Ramme ride in the Spring, and shew more then an usuall lust: if the Spring have beene very extraordinarily colde, or if Mildewes fall not in the Woodland-Countries, any of these are certaine signes of a hot Summer to follow after. *Signes of a hot Summer.*

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Signes of a long Winter.

If you shall see the Oake loaden with Acornes: if the breast-bone of the Mallard when hee is kild looke red: if Hornets be seene after the end of October, or if Cattell doe trample and tread the earth much, making it myrie, or like a new plough'd field: any of these are most certaine signes that the Winter will be sharpe, long, and cruell.

Signes of a forward or backward yeere.

If there fall much Raine before October, by meanes whereof many inundations doe follow, and that such wet lye long above ground: it is a most infallible token that the yeere will be very forward: but if the wet doe fall after October, then it is a signe that the yeere will be indifferent, but and if the wet fall after November, then it is held for most certaine that the yeere will fall out very slack and backward.

Signes of a good or bad yeere.

If the Oke Apples, when they are opened, breed Flyes, or if Harvest be seasonable, and the Spring warme: if Snow fall in February: if Broome put forth great store of Flowers: if the Walnut-tree have more blossomes then leaves: if the flower of the Sea-Onion wither not quickly, or if the Spring be preserved from Frosts and Blasting, then any of these are certaine signes that the yeere will proove passing good and fruitfull: but if the Oake Apple breed insteed of a Flye a Spider: if Comets or Meteors oppresse the Ayre: if the Summer fall out unnaturally moyst: if the Dewes when they fall or the rising of the Sunne descend to the Rivers: if Frosts come in unseasonable times: if wood-Birds flye to the Plaines, and refuse covert: if the Sunne have his whole body, or at least three parts ecclipsed: when Corne beginneth to bloome, and is not fully kirneld, then any of these be most certaine signes that the yeere will proove bad, barraine, and fruitlesse.

Signes from Christmas day.

Againe, if Christmas day shall fall upon the Sunday, the yeere shall bee good, seasonable, and abounding with all store and plenty: if it fall upon Munday the yeere shall be reasonable temperate and fruitfull, onely something subject to inundation of waters, losse by shipwrack, and some mortality of people, especially women in child-bearing: if it fall upon

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upon Tueſday, the yeere will proove very barraine and unfruitfull, much dearth will raigne, and amongſt people great plague and mortality: if it fall upon Wedneſday, the yeere ſhall be reaſonably ſeaſonable, though a little inconſtant: there ſhall be plenty of all things, onely much ſickneſſe, and great likelyhood of warres: if it fall upon the Thurſday, the yeere ſhall be generally very temperate and wholeſome, onely the Summer ſubject to moiſtneſſe, much diviſion is like to fall amongſt the Clergie, and women ſhal be given to more laſciviouſneſſe then at other ſeaſons: if it fall on the Friday, the yeere ſhall be barraine and unwholeſome, for ſickneſſe ſhall rage with great violence, much mortality ſhall fall amongſt young Children, and both Corne and Cattell ſhall be ſcarce, and of a deere reckoning: if it fall on the Saturday, the yeere ſhall be reaſonably good and plentifull, onely the people of the world ſhall bee exceeding perverſe, and much given to mutinie and diſſention one againſt another.

Againe, if the Sunne riſe without impediment, and ſhine bright and cleere upon Chriſtmas day, the yeere will be very plentifull: if it riſe likewiſe cleere the ſecond day in Chriſtmas, then Corne will fall in price: if it riſe cleere the third day in Chriſtmas, there will onely bee diſſention in the Church: if on the fourth day, it fore-ſhewes trouble unto young perſons: if on the fift day, it ſhewes that many good things will increaſe: if on the ſixt, doubtleſſe every Garden will bring forth great plenty: if on the ſeaventh, then is much dearth and ſcarſitie to bee feared: if it ſhine cleare on the eight day in Chriſtmas, then there is likely to be great ſtore of Fiſh: if on the ninth, it will doubtleſſe prove a good yeere for all manner of Cattell: if on the tenth, the yeere is likely to yeeld much cauſe of mourning: if on the eleaventh, there will fall much fogges, thicke miſtes, and great infection will followe after. Laſtly, if the Sunne ſhine cleare the twelfth day after Chriſtmas, it fore-ſhewes much warres and troubles, with great loſſe and bloudſhed. *Signes from the Sunne riſing.*

Againe,

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Signes from the twelve dayes in Christmas.

Againe, according to these former observations, you shall understand, that what weather shall fall or be on the sixe and twentieth day of December, the like weather shall be all the moneth of Ianuary after: what shall be on the seaven and twentieth of December, the like shall be all the moneth of Februarie following: what weather shall be on the eight and twentieth day of December, the like weather shall be all March following: what weather shall be the nine and twentieth day of December, the same shall be all Aprill after: what on the thirtieth, the same all May: what on the one and thirtieth, the like all Iune following: what weather shall fall on the first of Ianuary, the same shall be all Iuly after: what on the second of Ianuary, the same all August after: what on the third, the same all September after: what on the fourth, the same all October following: what on the fift, the same all November after, and what weather shall fall on the sixt of Ianuary, which is Twelfe-day, the same weather shall fall all December following.

Signes from Saint *Pauls* day.

Againe, if Saint *Pauls* day prove faire, dry and bright, it fore-sheweth plenty of all things the yeere following: but if it be misty, then it shewes great dearth of Cattell. If there fall upon that day Snow or Raine, then it shewes Famine and Want of Corne; but if it be windy, tempestuous; or if it thunder, then it sheweth that great warres will follow.

Signes from *Maudlin*, and Saint *Swythens* day.

Againe, looke what quantitie of Raine falleth either on *Mary Maudlins* day, or on Saint *Swithens* day, be it more or lesse, the same proportion will fall for the space of forty dayes after: but if these two dayes be faire and dry, all the time of Harvest will be so also.

If Corne shall be cheape or deare.

N. B.

Now if you will know whether Corne shall be cheape or deere, take twelve principall graynes of Wheate out of the strength of the eare, upon the first day of Ianuarie, and when the harth of your Chimney is most hot, sweepe it cleane, then make a stranger lay one of these Graynes on the hot harth, then marke it well, and if it leape a little,

Corne

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Corne shall be reasonably cheape, but if it leape much then Corne shall be exceeding cheape, but if it lye still and move not, then the price of Corne shall stand, and continue still for that Moneth: and thus you shal use your twelve Grains, the first day of every Moneth one after another, that is to say, every Moneth one Graine, and you shall know the rising and falling of Corne in every Moneth, all the yeere following.

Signes from Thunder.

If it shall thunder much the first Sunday of the New-yeere, it shewes great death and mortality amongst learned men: if it thunder the first Munday, it shewes great death of women, and many Eclipses of the Sunne: if it thunder on the first Tuesday, it shewes plenty of corne, but much Warre and dissention: if it thunder on the first Wednesday, it shewes mortality and death amongst the worst sort of people, both Male and Female, besides much Warre and bloudshed: if it thunder on the first Thursday in the New-yeere, it sheweth much plenty of Corne that will follow: if it thunder on the first Friday, it betokeneth the losse of great Personages, and men of authority, many affrayes and murthers, with much peril and danger. Lastly, if it thunder upon the first Saturday in the New-yeere, it foreshweth onely a generall plague and infection, which shall raigne with strong violence.

Signes of sicknes or health.

If you shall perceive the Summer and Spring time to fall out very moyst and rainie, without wind, yet in their owne natures very hot and scorching, or if the Southern or South-west winde blow much without raine: if many fogs and mists fall in the Morning, and overcome the Sunne beames at noone also: if the Sunne suffer any large Eclipse: if Autumne and Winter be more foggie then moyst or cold: if the Dowe or Leaven, of which you mould your bread, doe quickly mould and cleave together without labour: if Dogs runne madde, if Birds forsake their nests: if sheepe rot: if Fennes, Marrish-grounds, and muddy places abound with Frogs: if Mud-walls breed Swine-lice or Sowes: if Moales forsake the earth: if the small Foxe or Meazels be rife and

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abound in the Spring time, or if women generally doe miscarie in childe-bed, any of these are most certaine signes of much sickneſſe and mortality that will follow the yeere after: and all such signes as are directly contrarie to any of these, as if the Summer and Spring doe fall out dry and windie: if the South or South west winde bring with it ever raine: if no fogs or mists oppresse the ayre, and so forth of all the rest which are before shewed, are most certaine and infallible tokens of a very wholesome and healthfull yeere, which will ever follow after.

The preservation of health.

Now for the preservation of your health, and to prevent all such sicknesses as are incident to follow in these casuall and dangerous yeeres: through every severall moneth in the yeere you shall observe these few precepts.

First in the moneth of Januarie you shall forbeare to let bloud, unlesse upon violent extremity, and that the signe be exceeding good for the same, you shall drink white wine in the morning fasting, & rub your head with a course Towell very hard, but yet cleane, for it is a most wholsome friction.

In the moneth of February, you shall not let bloud for wantonnesse, but neede: you shall forbeare Hearb-pottage, for at that time onely they are least wholesome: you shall keepe the soales of your feete from wet, and use every morning your former friction.

In the moneth of March, the signe being good, you may let bloud according to your youth, strength, and necessitie: you may take hot and sweet meats & drinkes, especially Almonds, Figs and Reyzins, and use also your former friction.

In the moneth of Aprill, you may bleed as in the moneth of March: in it also you may purge, by the order of a learned directer: let your dyet be hot and fresh meats, and your drink temperate: also in this moneth your former friction is exceeding wholesome.

In the moneth of May be no sluggard, for the bed is unwholsome. Clarified Whay is this moneth a most soveraine drink, and Sage with sweet Butter is a most excellent breakfast: young Lettuce is an approved good Sallet, and the in-

trals.

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trals or offall of Beasts would by all meanes be refused, it is also good to let bloud in this moneth onely for necessity, and not for pleasure, and beware by all meanes, not to goe wetshooed in the dewe in the morning.

In the moneth of June observe the dyet of May, or if you be of youthfull bloud, it is not amisse if it be a little cooler, and for bleeding let it be for urgent necessity.

In the moneth of July eschew all wanton bed-sport: and if each morning you take a draught of clarified Butter-milk, it is very wholesome: use coole Julyps, and meats that are fresh, and not stirring: now forbeare Lettice, and bleed not, except it be in cause of great extremity.

In the moneth of August forbeare all manner of Worts, and Cabages, and generally all meates and Spices which are hot and inflaming: but by any meanes bleed not at all, except by the direction of most approved learning.

In the moneth of September you may eate any sort of ripe Fruits: you may bathe in hot Bathes, for colde causes, at your pleasure, and you may let bloud according to your necessity: those foods are best which are of lightest digestion, and those drinkes most wholesome which are rather strong then scowring.

In the moneth of October, spare not any bloud, except great extremity compell you, and for your dyet, let it be of such foodes as are most strong and nourishing, and your drink Beere or Ale, of indifferent strength, and now and then at the midst, and end of meales, a draught or two of such Wines as are pleasant, strong, and wholesome: Sallets of Flowers, preserved in Vinegar and Sugar, as either Violets, Broome-flowers, or Gelly-flowers of all kindes, or Sampyre, Purslane, or Beane-cods, preserved in pickell, are of excellent use, both in this moneth, and the other two which follow.

In the moneth of November open also no veine, but for great need, because the blood is then gathered together into the principall vessels: Bathing in this Moneth is utterly to bee refused, onely let your body bee kept warme,

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and every colde humour or obstruction, rather dissolved by moderate frictions, as is shewed in the moneth of Januarie and Februarie, then by the violence of any other inward medicine. Shell-Fish in this moneth is very wholesome, and so are all other sorts of Fish, which are not too rawe or flymie.

In the Moneth of December blood-letting should be also forborne, except upon some especiall dayes, as after the five and twentieth day at the soonest: and for your diet let it be meate which is hot and nourishing, but by no meanes that which breedeth melancholy bloud. Use strong Wine and sharpe Sauces: as for the warmth of your body, next unto good cleathing, let it rather proceed from exercise that is moderate, then from roasting, or broiling your selfe against the fire, for in this Moneth that body can hardly be found whose shinnes are made pyde and motley with the fires scorching.

And thus much touching the experience of the English *Husbandmen* in these fore-knowledges, and ayming after the times to come, being drawne from the observations and notes left us by succession of times of those learned Fathers, and other best knowne and approoved in these knowledges: yet I doe not binde every *Husbandman* to make as it were new Creeds of these Principles, but onely to give them to his memorie, as things that will neither oppresse nor hurrit, and if in any seldome-seene particularity, any shall vary from the purpose of the relation, to remember that there is above us a God of all Truth and Knowledge, who will dispose and governe all things, according to his good Will and Pleasure: to which let every Creature submit, in as much as he onely knoweth what is for mankinde most best and most convenient.

CHAP.

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CHAP. IIII.

Of the scituation of the Husbandmans house; the necessaries thereto belonging, together with the modell thereof.

SInce coverture is one of the necessariest things belonging unto mans life, and that it was the first thing that ever man invented, I thinke it not amisse before I enter into any other part of Husbandrie to begin with the *Husbandmans* house, without which no Husbandrie can bee maintained or preserved. And albeit the generall *Husbandman* must take such a house as hee can conveniently get, and according to the custome and abilitie of the soyle wherein he liveth; for many Countries are very much unprovided of generall materialls for well building: some wanting timber, some stone, some lime, some one thing, some another: yet to that *Husbandman* whom God hath enabled with power both of riches, and every other necessarie fit to have all things in a comely convenientnesse about him, if hee desire to plant himselfe decently and profitably, I would then advise him to chuse for his scituation no high hill, or great promontarie (the seate of Princes Courts) where he may be gazed upon by the eye of every traveller, but some pretty hard knole of constant and firme earth, rather ascending then descending, free from the danger of water, and being invironed either with some pretie Groves, of tall young spiers, or else with rowes of greater timber, which besides the pleasure and profit thereof (having wood so neere a mans dore) the shelter will be most excellent to keepe off the bleaknesse of the sharpe stormes and tempests in Winter, and be an excellent Wormestall for Cattell in the Summer. But why doe I runne into this large field of Scituation, since it is granted by all men, that a full

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perfection of Scituation for a Country house can no where be found, let mee onely advise our *Husbandman* to accept of what God and Nature hath liberally bestowed upon him, that is, to bestowe his cost upon his owne Inheritance, not others Fee-simples, for so like the hedge-Sparrowe he shall build for the Cuckoe, and when he would be most warme will perish for shelter.

To helpe defects.

Let him in the scituation of his house, where hee findes defects, apply himselfe to amend them, as where there wants wood, there to plant it, where there wants water there to search for it, where there is too much of any thing to abate it, and where there is too little of any thing there to encrease it: onely let him infallibly observe (as neere as he can) to place his house in a good and wholsome ayre; for what availes any thing, if his lodging bee unwholsome. Next a good ayre let him search for good neighbours, for peacefulnesse is a downe-bed, and disquiet a continuall Allaram; neither be neere Garisons where the Drummes are ever beating, nor brawling persons where contention is alwayes waking: let not your house bee too neere great Rivers or Brookes, they may smile in Summer, but they will be angrie in Winter, and it is better to have them wash your Grounds then wet your house, besides they oft vomit forth ill ayres, and are in their owne natures Aguish and unwholsome: yet this house would be planted, if possible, neere to the over-looking or view of some River, or fresh running Brooke, but by no meanes upon the verge of the River, nor within the danger of the overflow thereof: for the one is subject to too much coldnesse and moisture, the other to overflowing. I would not have our *Husbandman* in his building to imitate *Babell* for height, nor *Babilon* for spatiousnesse, but to keepe a moderation suitable to his calling, for great Cages make not good Birds, nor huge Buildings hospitable Owners. You shall plant the face, or fore-front of your house, upon the rising of the Sunne, that the vigour of his warmth may

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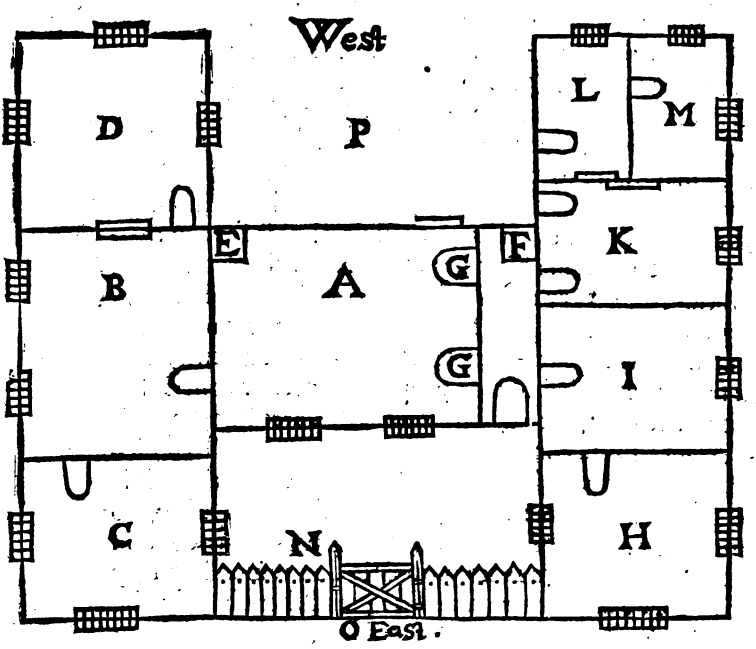
may at no time depart from some part thereof, but that as hee riseth on the one side, so hee may set on the other. You shall place the upper or best end of your house, as namely, where your dining Parlor and chiefest roomes are, which ever would have their prospect into your Garden, to the South, that your Butterie, Kitchin, and other inferiour offices may stand to the North, coldnesse bringing unto them a manifold benefit. Now touching the fashion, or modell of the house, it is impossible almost for any man to prescribe a certaine forme, the world is so plentifull in invention, and every mans minde so much addicted to novelty and curiositie, yet for as much as it is most commended by the generall consent of all the Auncients, and that from the modell of that proportion may be contracted and drawne the most curious formes that are almost at this day extant, I will commend unto you that modell, which beareth the proportion of the Romane H. which as it is most plaine of all other, and most easie for convayance, so if a man upon that plaine song, (having a great purse) will make a descant, there is no proportion in which hee may with best ease show more curiositie; and therefore for the plaine *Husbandmans* better understanding, I will here shew him a *fac simile* (for to adde a scale were needlesse in this generall worke, all men not being desirous to build of one bignesse) and this it is:

Here



Here you behold the modell of a plaine Country mans houſe, without plaſter or imboſture, becauſe it is to be intended, that it is as well to be built of ſtudde and plaſter, as of lime and ſtone; or if timber bee not plentifull, it may be built of courſer wood, and covered with lime and haire; yet if a man would beſtow coſt in this modell, the foure inward corners of the hall would be convenient for foure turrets, and the foure gavell ends being thruſt out with bay windowes, might be formed in any curious manner: and where I place a gate and a plaine pale, might bee either a tarriſſe, or a gatehouſe, of any faſhion whatſoever; beſides all thoſe windowes which I make plaine, might be made bay windowes, either with battlements, or without; but the ſcope of my booke tendeth only to the uſe of the honeſt *Husbandman*, and not to inſtruct men of dignity, who in Archi-

Stooth, in Northumberland.

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Architecture are able wonderfully to controle me, therefore that the *Husbandman* may know the use of this *fac simile*, he shall understand it by this which followeth.

A. Signifieth the great Hall.
B. The dining Parlor for entertainment of strangers.
C. An inward Closset within the Parlor for the Mistrisses use, for necessaries.
D. A strangers lodging within the Parlor.
E. A staire-case into the roomes over the Parlor.
F. A staire-case into the Good-mans roomes over the Kitchin and Buttery.
G. The Skreene in the Hall.
H. An inward Cellar within the Buttery, which may serve for a Larder.
I. The Buttery.
K. The Kitchin, in whose Range may be placed a Brewing Lead, and convenient Ovens, the brewing vessels adjoyning.
L. The Dairy house for necessary busines.
M. The Milke-house.
N. A faire sawne pale before the formost Court.
O. The great gate to ride in at to the Hall dore.
P. A place where a Pumpe would be placed to serve the offices of the house.

This figure signifieth the dores of the house.
This figure signifieth the Windowes of the house.
This figure signifieth the Chimneyes of the house.

Now you shall further understand, that on the South side of your house, you shall plant your Garden and Orchard, as wel for the prospect therof to all your best rooms, as also because your house will bee a defence against the Northerne coldnesse, whereby your fruits wil much better prosper. You shall on the West side of your house, within your inward dairy and kitchin Court, fence in a large base Court, in the midst whereof would be a faire large Pond,

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well ſton'd and gravelled in the bottome, in which your Cattell may drinke, and Horſes when neceſſitie ſhall urge be waſht: for I doe by no meanes allow waſhing of Horſes after inſtant labour. Neere to this Pond you ſhall build your Dove-coate, for Pigions delight much in the water: and you ſhall by no meanes make your Dove-houſe too high, for Pigions cannot endure a high Mount, but you ſhall build it moderately, cleane, neate and cloſe, with water Pentiſſes to keepe away Vermine. On the North ſide of your baſe-court you ſhall build your Stables, Oxe-houſe, Cow-houſe, and Swine-coates, the dores and windowes opening all to the South. On the South ſide of the baſe-court, you ſhall build your Hay-barnes, Corne-barnes, Pullen-houſes for Hennes, Capons, Duckes, and Geeſe, your French Kilne, and Malting flowres, with ſuch like neceſſaries: and over croſſe betwixt both theſe ſides, you ſhal build your bound Hovels, to carie your Peaſe, of good and ſufficient timber, under which you ſhall place when they are out of uſe your Carts, Waynes, Tumbrels, Ploughes, Harrowes, and ſuch like, together with Plough-timber, and Axletrees: all which would very carefully be kept from wet, which of all things doth ſooneſt rot and conſume them. And thus much of the *Husbandmans* houſe, and the neceſſaries thereto belonging.

CHAP. V.

Of the ſeverall parts and members of an ordinary Plough, and of the joyning of them together.

IF a Workman of any Trade, or Myſterie, cannot give directions how, and in what manner, the Tooles wherewith he worketh ſhould be made or faſhioned, doubtleſſe hee ſhall never worke well with them, nor know when they are in temper, and when out. And ſo it fareth with the *Husbandman*; for if he know not how his Plough ſhould be made,

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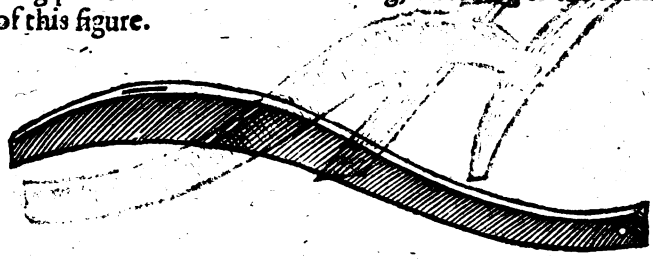
made, nor the ſeverall members of which it conſiſteth, with the vertue and uſe of every member, it is impoſſible that ever hee ſhould make a good furrow, or turne over his ground in Husbandly manner: Therefore that every *Husbandman* may know how a well ſhaped Plough is made, hee ſhall underſtand that the firſt member thereof, as being the ſtrongeſt and moſt principalleſt peece of timber belonging to the ſame, is called the Plough-beame, being a large long peece of timber much bending, according to the forme of this figure.



This beame hath no certaine length nor thickneſſe, but is proportioned according to the ground, for if it be for a clay ground, the length is almoſt ſeaven foote, if for any other mixt or lighter earth, then five or ſixe foote is long enough.

The ſecond member or part of the Plough, is called the ſkeath, and is a peece of wood of two foote and a halfe in length, and of eight inches in breadth, and two inches in thickneſſe: it is driven extreamely hard into the Plough-beame, ſlope-wiſe, ſo that joyned they preſent this figure.

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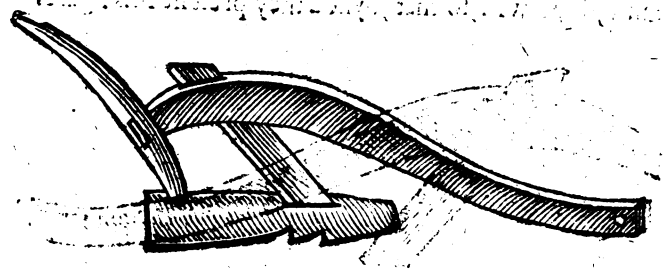
The third part is called the Ploughes principall Hale, and doth belong to the left hand, being a long bent peece of wood, somewhat strong in the midst, and so slender at the upper end, that a man may easily gripe it, which being fixed with the rest, presenteth this figure.

The fourth part is the Plough head, which must be fixed with the Skeath and the Hale all at one instant in two severall mortisse-holes: it is a flat peece of timber, almost three foote in length if it be for clay ground, otherwise shorter, of breadth seaven inches, and of thicknesse two inches and a halfe, which being joyned to the rest presenteth this figure.



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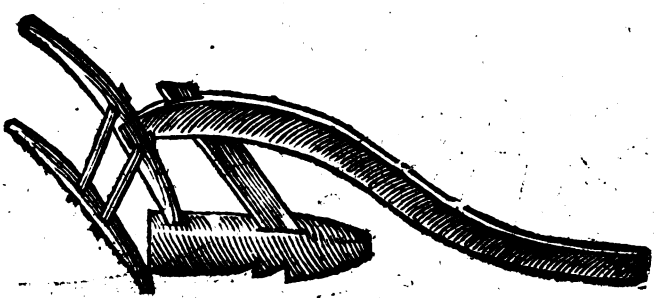
The

The fift part is the Plough ſpindels, which are two ſmall round peeces of wood, which coupleth together the Hales, as in this figure.

The fixt part is the right hand Hale, through which the other end of the ſpindels runne, and is much ſlenderer then the left hand Hale, for it is put to no force, but is onely a ſtay and ayde to the Plough-houlder when he commeth in heavy, ſtiffe, and ſtrong worke, and being joyned with the reſt, preſenteth this figure.



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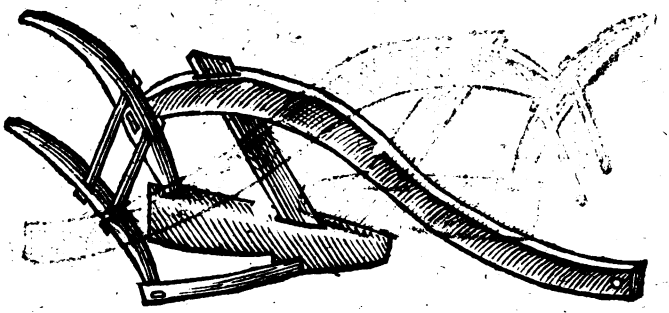
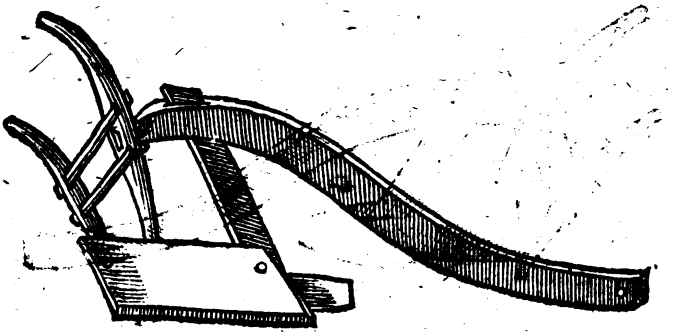
The seaventh part is the Plough-reft, which is a small peece of wood, which is fixt at one end in the further nick of the Plough head, and the other end to the Ploughs right-hand hale, as you may see by this figure.



The eight part is called the shelboard, and is a broad board of more then an inch thickneſſe, which covereth all the right side of the Plough, and is fastned with two strong pinnes of wood through the skeath, and the right-hand hale, according to this figure.



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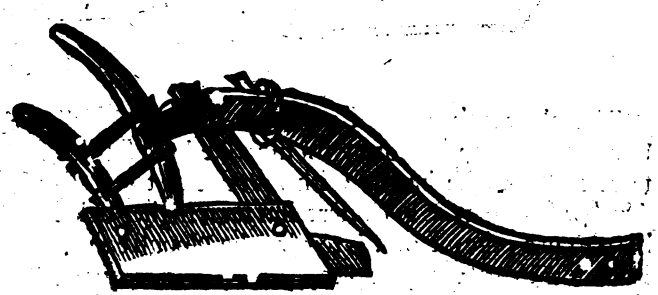
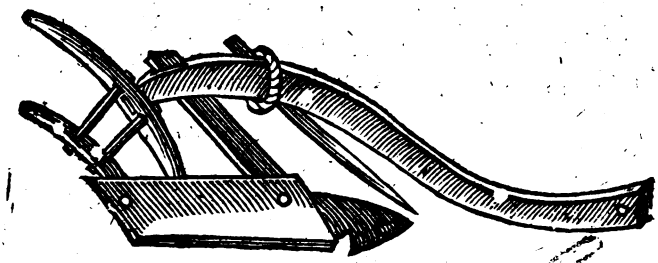
The ninth part is the Coulture, which is a long peece of Iron, made ſharpe at the neather end, and alſo ſharpe on one ſide, and being for a ſtiffe clay, it muſt be ſtraight without bending, which paſſeth by a mortiſſe-hole through the beame; and to this Coulture belongeth an Iron ring, which windeth about the beame, and keepeth it in ſtrength from breaking, as may appeare by this figure.

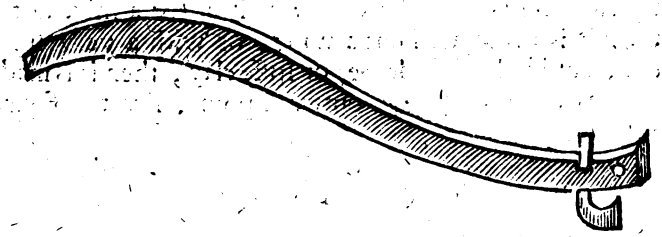


The tenth part of a compleate Plough, is the Share, which is fixed to the Plough head, and is that which cutteth and turneth up the earth: if it be for a mixt earth, then it is made without a wing, or with a very ſmall one, but if it be for a deepe, or ſtiffe clay, then it is made with a large wing, or an outward point, like the figure following.

The



The eleaventh part of a perfect Plough is called the Plough foote, and is through a mortisse-hole fastned at the farre end of all the beame with a wedge or two, so as the *Husbandman* may at his discretion set it higher or lower, at his pleasure: the use of it is to give the Plough earth, or put it from the earth, as you please, for the more you drive it downward, the more it raiseth the beame from the ground, and maketh the Irons forsake the earth, and the more you drive it upward, the more it letteth downe the beame, and so maketh the Irons bite the sorer; the figure wherof is this.



Thus have you all the parts and members of a Plough, and how they bee knit and joyned together, wherein I would wish you to observe that your Plough-wright ever

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ever rather give your Plough land then put her from the land, that is, rather leaning towards the earth and biting fore, then ever ſlipping out of the ground: for if it have too much earth, the *Husbandman* may help it in the holding; but if it have too little, then of neceſſity it muſt make foule worke: but for as much as the error and amends lye both in the office of the Plough-wright, I will not trouble the *Husbandman* with the reformation thereof.

Now you ſhall underſtand that there is one other thing belonging to the Plough, which albe it be no member thereof, yet is it ſo neceſſary, that the *Husbandman* which liveth in durty and ſtiffe Clayes, can never goe to Plough without it, and it is called the Aker-ſtaffe, being a pretty bigge cudgell, of about a yard in length, with an Iron ſpud at the end, according to this figure:

This Aker-ſtaffe the *Husbandman* is ever to carry within his Plough, and when at any time the Irons, Shelboard, or Plough, are choaked with durt, clay, or filth, which will cling about the old ſtubble; then with this Aker-ſtaffe you ſhall put the ſame off (your Plough ſtill going) and ſo keepe her cleane and ſmooth that your worke may lye the handſommer; and this you muſt ever doe with your right hand: for the Plough choaketh ever on the ſhelboard ſide, and betweene the Irons. And thus much touching the perfect Plough, and the members thereof.

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CHAP. VI.

How the Husbandman shall temper his Plough, and make her fit for his worke.

A Plough is to a *Husbandman* like an Instrument in the hand of a Musitian, which if it be out of tune can never make good Musick, and so the Plough, being out of order, if the *Husbandman* have not the cunning to temper it, and set it in the right way, it is impossible that ever his labour should come to good end.

It is very necessarie then that every good *Husbandman* know that a Plough being perfectly well made, the good order or disorder thereof consisteth in the placing of the Plough-Irons, and the Plough-foote. Know then, that for the placing of the Irons, the Share would be set to looke a little into the ground: and because you shall not bruise, or turne the point thereof, you shall knocke it fast upon the head, either with a crooked Rams-horne, or else with some piece of soft Ash-wood: and you shall observe that it stand plaine, flat, and levell, without wrying or turning either upward or downward: for if it runne not even upon the earth, it will never make a good furrow, onely as before I said, the point must looke a little downward.

Now, for the Coulture, you must place it slope-wise through the beame, so as the point of it, and the point of the Share may as it were touch the ground at one instant, yet if the Coulture point be a little thought the longer, it shall not be amisse: yet for a more certaine direction, and to trie whether your Irons stand true I or no, you shall take a string, and measure from the mor-tisse-hole through which the Coulture passeth, to the point of the Coulture, and so keeping your upper hand constant, lay the same length to the point of your share, and if one measure serve them both right, there being no difference betweene them, then the

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the Irons ſtand true for their length, otherwiſe they ſtand falſe.

Now your Coulture albe it ſtand true for the length, yet it may ſtand either too much to the land, or too much from the land, either of which is a great errour; and will keepe the Plough from going true: your Coulture therefore ſhall have certaine wedges of olde dry Aſh wood, that is to ſay, one before the Coulture on the upper ſide the beame, and another on the land ſide, or left ſide, the Coulture on the upper ſide the beame alſo; then you ſhall have another wedge behind the Coulture underneath the beame, and one on the furrow ſide, or right ſide, the beame underneath alſo. Now, if your Coulture have too much land, then you ſhall drive in your upper ſide wedge, and eaſe the contrary: if it have too little land, then you ſhall contrarily drive in your right ſide under wedge, and eaſe the other: If your Coulture ſtand too forward, then you ſhall drive in your upper wedge which ſtandeth before the Coulture; and if it ſtand too backward, and too neere your Share, then you ſhall drive in your under wedge which ſtandeth behinde the Coulture: if your Coulture ſtandeth awry any way, then are either your ſide wedges too ſmall, or elſe not even and plain cut, which faults you muſt amend, and then all will bee perfect. Now, when your Irons are juſt and truly placed, then you ſhall drive in every wedge hard and firme, that no ſhaking or other ſtraine may looſen them: as for the Plough foote it alſo muſt have a wedge or two, which when your Plough goeth right, and to your contentment (for the foote will keepe it from ſinking or riſing) then you ſhall alſo drive them in hard, that the foote may not ſtirre from the true place where you did ſet it. And that theſe things when a man commeth into the field may not be to ſeeke, it is the office of every good *Husbandman* never to goe forth with his Plough, but to have his Hatchet in a ſocket, fixt to his Plough beame, and a good peece of hard wedge wood, in caſe any of your wedges ſhould ſhake out and be loſt.

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Of holding the Plough.

When your Plough is thus ordered & tempered in good manner, and made fit for her worke, it then resteth that you know the skill and advantages in holding thereof, which indeed are rules of much diversity, for if it be a stiffe black clay which you plough, then can you not plough too deepe, nor make your furrowes too bigge: if it bee a rich hasell ground, and not much binding, then reasonable furrowes, laid close, are the best: but if it bee any binding, stonie, or sandie ground, then you cannot make your furrowes too small. As touching the governing of your Plough, if you see shee taketh too much land, then you shall writh your left hand a little to the left side, and raise your Plough-rest somewhat from the ground: if shee taketh too little earth, then you shall raise up your left hand, and carrie your Plough as in a direct line: If your Plough-Irons forbeare and will not bite on the earth at all, then it is a signe that you hang too heavie on the Plough hales, raising the head of the Plough from the ground, which errour you must amend, and of the two rather raise it up behinde then before; but to doe neither is best, for the Plough hale is a thing for the hand to governe, and not to make a leaning stock of: And thus much touching the tempering of the Plough, and making her fit for worke.

CHAP. VII.

Of the manner of Ploughing all simple Earths, which are uncompounded.

THat many famous and learned men, both in France, Spaine, Italy, and Germany, have spent all their best time in shewing unto the world the excellencie of their experiences, in this onely renowned Art of Husbandry, their large and learned Volumes, most excellently written, in that kinde, are witnesses: from whence we by translations have gotten some contentment, though but small profit; because those

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those forraine climates, differing much from ours, both in nature of earth, and temper of Ayre, the rules and observations belonging unto them can be little available to us, more then to know what is done in such parts, a thing more appertaining to our conference then practise. But now, that other Kingdomes may see, though we write lesse, yet wee know as much as belongeth to the office of the English *Husbandman*, I, though the meanest of many millions, have undertaken to deliver unto the world all the true rudiments, observations, and knowledges whatsoever, which hath any affinitie or alliance with English Husbandry. And for as much as the best and principallest part of Husbandrie consisteth in the ploughing and earing of the ground (for in that onely *Adam* began his first labours) I thinke it not unmeete, first to treate of that subject, proceeding so from branch to branch, till I have given every one sufficient knowledge.

To speake then first of the Tilling of Grounds. You shall well understand, that it is the office of every good *Husbandman* before hee put his Plough into the earth, truly to consider the nature of his Grounds, and which is of which qualitie and temper. To proceede then to our purpose; all soyles whatsoever, in this our Kingdome of England, are reduced into two kindes onely, that is to say, Simple or Compound. Simple, are those which have no mixture with others of a contrary quality, as are your stiffe Clayes, or your loose sands: your stiffe Clayes are likewise divers, as a black Clay, a blew Clay, and a Clay like unto Marble. Your sands are also divers, as a red sand, a white sand, a yellow sand, and a sand like unto dust. Your mixt earths are where any of these Clayes and Sands are equally or unindifferently mixed together, as shall be at large declared hereafter. Now as touching the tilling of your simple Clayes, it is to be noted, that the black Clay, of all earth, is the most fruitfull, and demandeth from the *Husbandman* the least toyle, yet bringeth forth his encrease in the greatest abundance: it will well and sufficiently bring forth three crops ere it desire rest:

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namely, the first of Barley, the second of Peaſe, and the third of Wheate: It doth not deſire much Manure, for it is naturally of it ſelfe ſo fat, rich, and fruitfull, that if you adde ſtrength unto his ſtrength, by heaping Manure or Compaſſe thereupon, you make it either blaſt, and mildew the Corne that growes, with the too much fatneſſe of the earth, or elſe through his extreame rankneſſe, to bring it up in ſuch abundance, that it is not able to ſtand upright when it is ſhot up, but falling downe flat to the ground, and the eares of Corne ſmothering one another, they bring forth nothing but light Corne, like an emptie huske, without a kirnell. The beſt Manure or Compaſſe therefore that you can give ſuch ground, is then to plough it in orderly and due ſeaſons, as thus: you ſhall begin to fallow, or breake up this ſoyle, at the beginning of May, at which time you ſhall plough it deepe, and take up a large furrow, and if your Lands lye any thing flat, it ſhall be meete that you begin on the ridge of the land, and turne all your furrowes upward, but if your Lands lye high and upright, then ſhall you begin in the furrow, and turne all your furrowes downward, which is called of *Husbandmen*, the caſting downe of Land. This firſt ploughing of Ground, or as *Husbandmen* terme it, the firſt ardor, is called fallowing: the ſecond ardor, which wee call ſtirring of ground, or ſommer ſtirring, you ſhall begin in July, which is of great conſequence for by meanes of it you ſhal kill all manner of weeds and thiſtles that would annoy your Land. In this ardor you muſt oft obſerve, that if when you fallowed you did ſet up your Land, then now when you ſtirre you muſt caſt downe your Land, and ſo contrarily, if before you did caſt downe, then now you muſt ſet up: your third ardor, which is called of *Husbandmen*, winter ridgeing, or ſetting up Land for the whole yeere, you ſhall begin at the latter end of September, and you muſt ever obſerve that in this third ardor you doe alwayes ridge up your Land, that is to ſay, you muſt turne every furrow upward, and lay them as cloſe together as may be; for ſhould you doe otherwiſe,

that

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that is to say, either lay them flat or loosely, the winter season would so beat and bake them together, that when you should sowe your seede, you would hardly get your Plough into the ground.

Now your fourth and last ardor, which must bee when you sowe your seede, you shall begin ever about the midst of March, at least one weeke before our Ladies day, commonly called the Annuntiation of *Mary*, and this ardor you shall ever plough downward, laying your ridges very well open, and you shall ever observe in this ardor, first to sowe your seede, and then after to plough your ground, turning your seed into the earth, which is called of *Husbandmen*, sowing under furrow: as soone as your ground is ploughed, you shall harrow it with an Harrow, whose teeth are all of wood, for these simple earths are of easie temper, and will of themselves fall to dust; then after you have thus sowne your ground, if then there remaine any clots or lumps of earth unbroken, you shall let them rest till after the next shower of raine, at which time you shall either with a heavie rouler, or the back side of your Harrowes, run over your Lands, which is called the sleighting of ground, and it will not onely breake such clots to dust, but also lay your Land plaine and smooth, leaving no impediment to hinder the Corne from sprouting and comming forth. In this same order as you are appointed for this black Clay, in this same manner you shall order both your blew Clay, and your Clay which is like unto Marble. Now as touching the Plough which is fittest for these Clayes, it must be large and strong, the beame long and well bending, the head thick and large, the Skeeth broad, strong, and well sloaping, the Share with a very large wing, craving much earth, and the Coulter long, thick, and very straight.

Now touching those lands which are simple and uncompounded, you shall understand that every good *Husbandman* must beginne his first ardor (which is to fallow them) at the beginning of Januarie, he must summer-stirre them, which is the second ardor, at the latter end of Aprill, he

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he ſhall caſt them downe againe, which is called foyling of Land, at the beginning of July, which is the third ardor, and wherein is to be noted, that howſoever all other ardors are ploughed, yet this muſt ever be caſt downward: the fourth ardor, which is winter-ſtirring or winter-ridgeing, muſt ever begin at the end of September, and the fift and laſt ardor muſt be performed when you ſowe your Ground, which would be at the middeſt of May, at the ſooneſt; and if your leaſure and abilitie will give leave, if you turne over your Ground againe in Januarie, it will be much better, for theſe ſands can never have too much ploughing, nor too much Manure, and therefore for them both, you ſhall apply them ſo oft as your leaſure will conveniently ſerve, making no ſpare when either the way or opportunity will give you leave. Now for as much as all ſands, being of a hot nature, are the fitteſt to bring forth Rye, which is a graine delighting in drineſſe onely, you ſhall underſtand, that then you ſhall not neede to plough your Ground above foure times over, that is, you ſhall fallow, Summer ſtirre, foyle, and in September ſowe your Corne: and as theſe ardors ſerve the red ſand, ſo are they ſufficient for your white ſand, and your yellow ſand alſo. As touching the Ploughes fit for theſe light earths, they would be little and ſtrong, having a ſhort ſlender beame and a crooked; a narrow and thinne head, a ſlender skeeth, a ſhare without a wing, a Coulter thinne and very crooked, and a paire of Hales much bending forward towards the man; and with this manner of Plough you may plough divers mixt and compounded earths, as the blacke Clay and red ſand, or the red ſand and white gravell. And thus much as touching earths that are ſimple and uncompounded. I will now proceede to the particular Huſbandrie of theſe uncompounded earths.

CHAP.

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CHAP. VIII.

The manner of Ploughing the rich, stiffe, blacke Clay, his Earing, Plough, and other Instruments.

OF all the Soyles in this Kingdome, there is none so rich & fertile (so it be well handled & Husbanded) as is that which we call the stiffe black clay, & indeed is more blacker to look on then any other Soyle, yet sometimes it wil turn up very blewish, with many white veines in it, which is a very speciall note to know his fruitfulnesse; for that blewish earth mixt with white, is nothing else but very rich Marle, an earth that in Cheshire, Lancashire, and many other Countries, serveth to Manure and make fat their barraineſt land in such sort, that it will beare Corne seaven yeeres together. This blak Clay as it is the best soyle, well Husbanded, so it is of all soyles the worst if it be ill Husbanded: for if it lose but one ardor, or seasonable Ploughing, it will not be recovered in foure yeeres after, but will naturally of it selfe put forth wilde Oates, Thistles, and all manner of offensive weedes, as Cockle, Darnell, and such like: his labour is strong, heavie, and sore, unto the cattell that tilleth it, but to the *Husbandman* is more easie then any other soyle; for this asketh but foure times Ploughing over at the most, where divers other soyles aske five times, and sixe times, as shall bee shewed hereafter. But to come to the Ploughing of this soyle, I hold it meete to begin with the beginning of the yeere, which with *Husbandmen* is at Plough-day, being ever the first Munday after the Twelfe-day, at which time you shall goe forth with your draught, and begin to Plough your Peasearth, that is, the earth where you meane to sowe your Pease, or Beanes: for I must give you to understand, that these Clayes are ever more naturall for Beanes then Pease, not but that they will beare both alike, onely the *Husbandman* imployeth them more for Beanes, because Pease and Fitches will grow upon every soyle, but Beanes will grow no where

Plough Munday.

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but on the Clayes onely. This Peaſe-earth is ever where Barley grew the yeere before, and hath the Stubble yet remaining thereon. You ſhall Plough this Peaſe-earth ever upward, that is, you ſhall begin on the ridge of the land, and turne all your furrowes up, one againſt another, except your lands lye too high (which ſeldome can be ſeene) and then you ſhall begin at the furrow, and caſt downe your land.

Now, when you have Ploughed all your Peaſe-ground, you ſhall let it ſo lye, till it have received divers Froſts, ſome Raine, and then a faire Seaſon, which betwixt Plough-day and Saint *Valentines* day you ſhall be ſure to enjoy: and this is called, *The letting of Land lye to baite:* for without this reſt, and theſe Seaſons, it is impoſſible to make theſe Clayes harrow, or yeeld any good mould at all. After your Land hath received his kindely baite, then you ſhall caſt in your Seede, of Beanes, or Peaſe: but in my conceit, an equall mixture of them is the beſt ſeede of all, for if the one faile, the other will be ſure to hit: and when your land is ſowne, you ſhall harrow it with a Harrow that hath woodden teeth.

The next Ardor after this, is the ſowing of your Barley in your fallow field: the next is the fallowing of your ground for Barley the next yeere: the next Ardor is the Summer-ſtirring of that which you fallowed: the next is the foyling of that which you Summer-ſtirde: and the laſt is the Winter rigging of that which you foil'd: of all which Ardors, and the manner of Ploughing them, with their Seaſons, I have written ſufficiently in a former chapter, where I ſpeak of ſimple earths uncompounded.

Now whereas I told you before that theſe Clayes were heavie work for your Cattell, it is neceſſary that I ſhew you how to eaſe them, and which way they may draw to their moſt advantage, which onely is by drawing in Beare-geares, an invention the skilfull *Husbandmen* hath found out, wherein foure Horſes ſhall draw as much as ſixe and ſixe as eight, being geared or harneſſed in any other contrary faſhion. Now becauſe the name only betereth not your knowledge, you ſhall here behold the figure and manner thereof.

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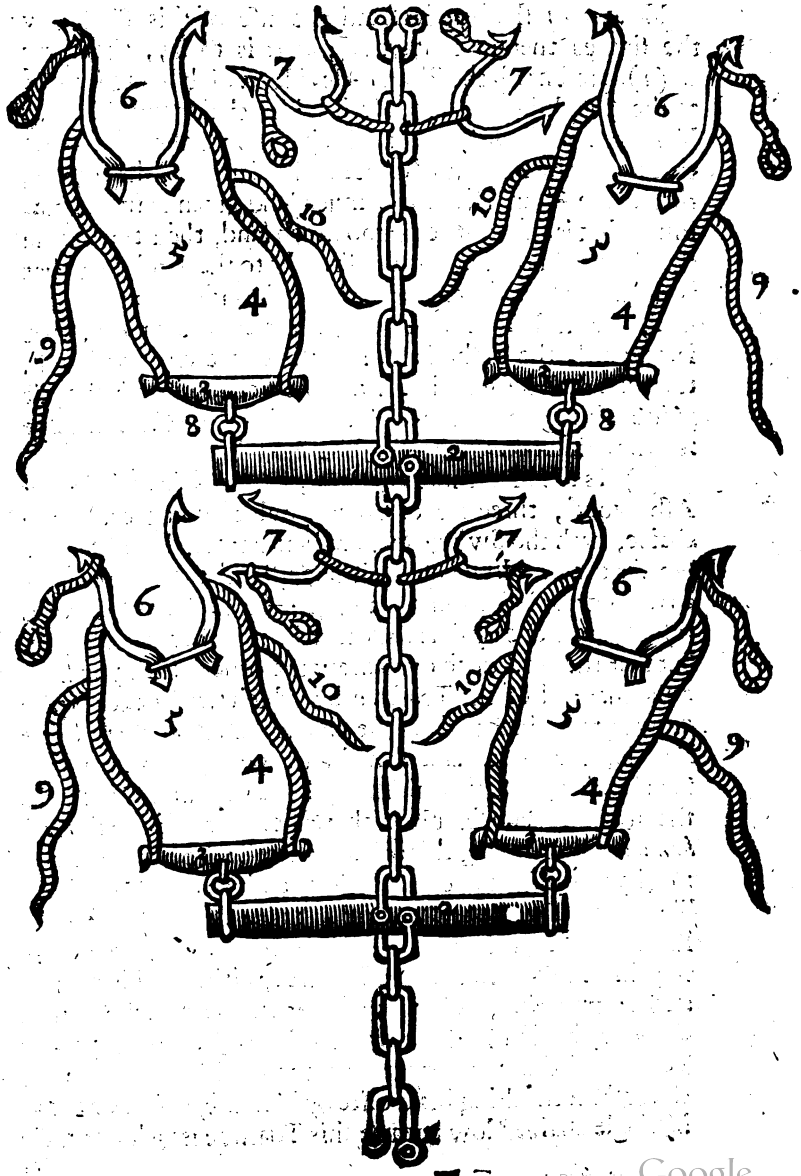

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Now you shall understand the use of this Figure by the figures therein contayned, that is to say, the figure (1) presenteth the Plough-cleviſſe, which being joyned to the Plough-beame, extendeth with a chaine unto the first Toastree: and touching this Cleviſſe, you shall understand, that it must be made with three nickes in the midst thereof, that if the Plough have too much land given it in the making, that is, if it turne up too much land, then the chaine shall be put in the outwardmost nicke to the land side, that is, the nick towards your right hand: but if it take too little land, then it shall be put in the nicke next the furrow, that is, towards the right hand: but if it goe even and well, then you shall keepe it in the middle nicke, which is the just guide of true proportion. And thus this Cleviſſe is a helpe for the evill making or going of a Plough.

(2) Is the hind-most Toastree, that is, a broad piece of Ash wood, three inches broad, which going crosse the chaine, hath the Swingletrees fastned unto it, by which the Horses draw. Now you shall understand that in this Toastree is great helpe and advantage: for if the two Horses which draw one against the other, be not of equall strength, but that the one doth over-draw the other, then you shall cause that end of the Toastree by which the weaker Horse drawes, to be longer from the chaine then the other, by at least halfe a foote, and that shall give the weaker Horse such an advantage, that his strength shall counterpoyse with the stronger Horse. Now there hee some especiall Husbandmen that finding this disadvantage in the Toastree, and that by the uncertaine shortening, and lengthening of the Toastree, they have sometimes more disadvantaged the strong Horse, then given helpe to the weake, therefore they have invented another Toastree, with a double chaine, and a round ring, which is of that excellent perfection in draught, that if a Foale draw against an olde Horse, yet the Foale shall draw no more then the abilitie of his owne strength, each taking his stroke by himselfe, as if they drew by single chains. Now lastly this Toastree is such a notable

Implement

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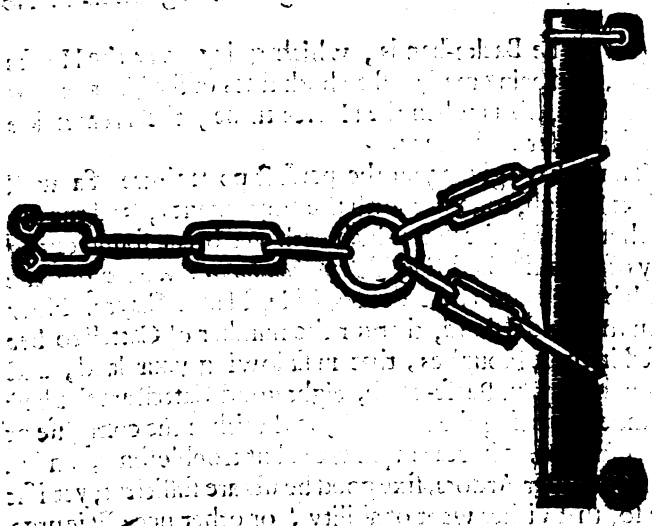
Implement both in Plough, Cart, or Waine, and so worthy to bee imitated of all good Husbands, I thinke it not amisse to shew you the figure thereof.

The Toastree with double chaines.



(3) The Swingletrees, being pieces of Ash wood cut in proportion afore-shewed, to which the Treates, by which the Horses draw, are fastned with strong loopes.

(4) The Treates by which the Horses draw, being strong cords made of the best Hempe.

(5) The place betweene the Treates, where the Horses must stand.

(6) The Hames which girt the Collers about, to which the other end of the Treates are fastned, being compassed pieces of wood, either cleane Ash, or cleane Oake.

(7) The round Withes of wood, or broad thongs of leather, to put about the Horses necke, to beare the maine chaine from the ground, that it trouble not the Horses in their going.

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(8) The Single-links of Iron, which joyne the Swingle-trees unto the Toastrees.

(9) The Belly-bands, which passe under the belly of the Horse, and are made fast to both sides of the Treates, keeping them downe, that when the Horse drawes, his coller may not choake him: being made of good small line or cord.

(10) The Backe-bands, which going over the Horses backe, and being made fast to both sides of the Treates, doe hold them, so as when the Horses turne, the Treates doe not fall under their feete.

Thus I have given you the perfect portraiture of a well yoakt Plough, together with the Implements, and shapes of them, being the best which hath yet beene found out by any of our skilfullest English *Husbandmen*; whose practise hath beene upon these deepe, stiffe, blacke Clayes. Now you shall understand, that for the number of Cattell to bee used in these Ploughes, that in fallowing your land, and Ploughing your Pease-earth, eight good Cattell are the best number, as being the strongest, and within the compasse of government, whereas more were but troublesome, and in all your other Ardors, sixe good beasts are sufficient; yet if it be so, that either want of ability, or other necessitie urge, you shall know that sixe beasts will suffice either to fallow, or to Plough Pease-earth, and foure beasts for every other Ardor or earing: and lesse then this number is most insufficient, as appeares by daily experience, when poore men kill their Cattell onely by putting them to over-much labour. And thus much touching the ploughing of the black Clay.

How many beasts in a Plough.

CHAP.

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CHAP. IX.

The manner of Ploughing the white or gray Clay, his Eatings, Plough, and Instruments.

NOW as touching the white or gray Clay, you shall understand that it is of divers and sundry natures, altering according to his tempers of wet or drineſſe: the wet being more tough, and the dry more brittle: his mixture and other Characters I have shewed in a former Chapter, wherfore for his manner of Ploughing (observing my first methode, which is to begin with the beginning of the yeere, I meane at Christmas) it is thus:

If you finde that any of this white or gray Clay, lying wet, have leſſe mixture of ſtone or chaulke in it, and ſo conſequently bee more tough, as it doth many times fall out, and that upon ſuch land, that yeare, you are to ſowe your Peaſe and Beanes: for as in the former blacke Clay, ſo in this gray Clay you ſhall begin with your Peaſe-earth ever: then immediately after Plough-day, you ſhall plough up ſuch ground as you finde ſo tough, in the ſelfe-ſame manner as you did plough the black Clay, and ſo let it lye to baite till the Froſt have ſeaſoned it, and then ſowe it accordingly. But if you have no ſuch tough land, but that it holdes it owne proper nature, being ſo mixt with ſmall ſtones and chaulke, that it will breake in reaſonable manner, then you ſhall ſtay till the latter end of Januarie, at what time, if the weather bee ſeaſonable, and inclining to drineſſe, you ſhall beginne to plough your Peaſe-earth, in this manner: Firſt, you ſhall cauſe your ſeedes-man to ſowe the land with ſingle caſts, as was ſhewed upon the blacke Clay, with this caution, that the greater your ſeede is, (that is, the more Beanes you ſowe) the greater muſt bee your quantity: and being ſowne, you ſhall bring your Plough, and beginning at the furrow of the land, you ſhall plough every

Of ſowing of Peaſe and Beanes.

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every furrow downeward upon the Peaſe and Beanes: which is called ſowing of Peaſe under furrow: and in this manner you ſhall ſow all your Peaſe and Beanes, which is cleane contrary to your blacke Clay. Beſides, whereas upon the ſtiffe Clay it is convenient to take as large furrowes as you pleaſe: upon this kinde of gray Clay you ſhall take as ſmall furrowes as is poſſible. Now the reaſon for this manner of Ploughing your Peaſe-earth, is, becauſe it is a light kinde of breaking earth, ſo that ſhould it be ſowne according to the ſtiffe blacke Clay, it would never cover your Peaſe, but leave them bare, both to bee deſtroyed by the Fowles of the ayre, and the bitterneſſe of the weather. As ſoone as your Peaſe and Beanes are riſen a fingers length above the earth, then if you finde that any of your lands doe lye very rough, and that the clots be great, it ſhall not be amiſſe, to take a payre of woodden Harrowes, and harrow over all your rough lands, the benefit whereof is this, that it will both breake the hard clots, and ſo give thoſe Peaſe leave to ſprout through the earth, which before lay bound in and drowned, and alſo lay your lands ſmooth and cleane, that the Mowers when they come to mowe your Peaſe and Beanes, ſhall have better worke, and mowe them with more eaſe, and much better to the owners profit. For you muſt underſtand that where you ſowe Beanes, there it is ever more profit to mowe them with Sythes, then to reape them with Hookes, and much ſooner, and with leſſe charge performed. The limitation of time for this Ardor or earing, is from the latter end of January untill the beginning of March, not forgetting this rule, that to ſowe your Peaſe and Beanes in a ſhewer, ſo it be no beating raine, is moſt profitable: becauſe they, as Wheat, take delight in a freſh and a moyſt mould.

Of ſowing of Barley.

After the beginning of March, you ſhall begin to ſowe your Barley upon that ground which the yeere before did lye fallow, and is commonly called your Tilth, or fallow field: and if any part of it conſiſt of ſtiffe and tough ground, then you ſhall, upon ſuch ground, ſowe your Barley under furrow,

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furrow, in such manner and fashion as I described unto you for the sowing of your stiffe blacke Clay: but if it be (as for the most part these gray and white Clayes are) of a much lighter, and as it were, fussie temper, then you shall first plough your land upward, cleane and well, without baukes or stiches: and having so ploughed it, you shall then sowe it with Barley, that is to say, with double casts, I meane, bestowing twise so many casts of Barley, as you would doe if you were to sowe it with Pease. And as soone as you have sowne your Barley, you shall take a paire of woodden Harrowes, and harrow it as small as is possible: and this is called sowing above furrow.

Of sowing Oates.

Now if you have any land, which either through the badnesse of the soyle, or for want of Manure, is more barraine, and hard to bring forth then generally the rest of your land is, then you shall not bestowe Barley thereupon, but sowe it with Oates, in such manner and fashion as is appointed for the sowing of Pease, that is to say, if it bee stiffe ground you shall sowe it above furrow, if it be light ground, then you shall sowe it under furrow, knowing this for a rule, that the barraineſt ground will ever beare indifferent Oates, but if the ground have any small heart, then it will beare Oates in great abundance: neither neede you to be very precise for the oft ploughing of your ground before you sowe your Oates, because Oates will growe very well if they be sowne upon reasonable ground, at the first ploughing: whence it comes to passe, that many *Husbandmen* doe oft sowe their Oates where they should sowe their Pease, and in the same manner as they doe sowe their Pease, and it is held for a rule of good Husbandrie also: because if the ground be held any thing casuall for Pease, it is better to have good Oates then naughty Pease: besides, your Oates are both a necessary graine in the house, as for Oate-meale, for the pot, for Puddings, and such like, and also for the Stable, for Provender, and the feeding of all manner of Poultrie. The time for sowing of your Barley and Oates, is from the first of March till the first of Aprill, observing ever

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to sowe your Oates first, and your Barley after, for it being onely a Summer graine, would participate as little as may be with any part of the Winter.

Of Fallowing

About the middest of Aprill you shall beginne to fallow that part of your ground, which you intend shall take rest that yeere, and so become your fallow or tilth-field. And in fallowing this gray or white Clay, you shall observe all those rules and ceremonies, which are formerly described for the fallowing of the stiffe blacke Clay, knowing that there is in this worke no difference betweene the blacke Clay, and the gray Clay, but both to be ploughed after one manner, that is to say, to have all the furrowes cast downeward, and the ridges of the lands laid largely open, and of a good depth, onely the furrowes which you turne upon this gray Clay must bee much smaller, and lesse then those which you turne upon your stiffe blacke Clay, because this earth is more naturally enclined to binde and cleave together then that of the blacke Clay. The time for fallowing of this Ground, is from the middest of Aprill untill the middest of May: at what time you shall perceive your Barley to appeare above the ground, so that then you shall beginne to sleight and smooth it: but not with backe Harrowes, as was described for the blacke Clay, because this gray Clay being not so fat and rich, but more enclined to fastnesse and hardnesse, therefore it will not sunder and breake so easily as the other: wherefore when you will smooth or sleight this Ground, you shall take a round piece of wood, being in compasse about at least thirty inches, and in length sixe foote, having at each end a strong pinne of Iron, to which making fast two small poales, by which the Horse shall draw, yet in such sort, that the round piece of wood may roule and turne about as the Horse drawes it: and with this you shall roule over all your Barley, and by the waight of the round piece of wood bruise and break all the hard clots asunder. This is called amongst *Husbandmen* a Rouler, and is for this purpose of sleighting and smoothing of grounds of great use and profit. Now you shal understand

Of sleighting Barley.

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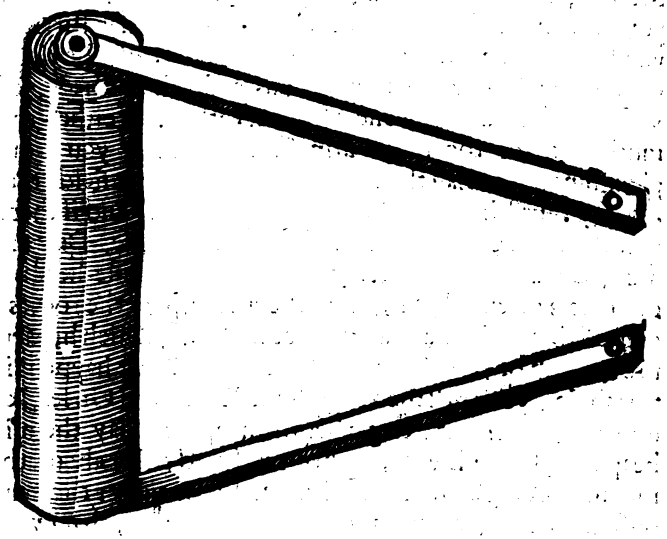
understand that you must not at any time sleight or smooth your Corne, but after a shower of Raine, for if the mould be not a little moistned, the rouler will not have power to breake it.

Now for as much as this rouler is of so good use, and yet not generally used in this Kingdome, I thinke it not amisse to shew you the figure thereof.

The great Rouler.



As soone as you have roulled over your Barley, and laid it so smooth as you can with your rouler, if then you perceive any hard clots, such as the rouler cannot breake, then you shall send forth your servants with long clotting beetels, made broad and flat, and with them you shall breake asunder all those hard clots, and so lay your Barley as smooth and cleane as is possible: the profit whereof you shall both finde in the multiplying of your Corne, and also in the saving of your Sythes from breaking, at such time as you

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shall come to mowe your Corne, and gather in your Harvest.

Your Barley being thus laide smooth, you shall then follow your other necessarie businesses, as preparing of your fewell, and other needments for Houshold, untill the beginning of June, at which time you shall begin to Summer-stirre your fallow field, which shall bee done in all points after the same maner, as you did Summer-stirre your blacke Clay, that is to say, you shall begin in the ridge of the land, and as when you fallowed your land, you turned your furrowes downeward, so now in Summer-stirring, you shall turne your furrowes upward, and close the ridge of your land againe. As soone as this Ardor is finished, or when the unseasonablenesse of the weather, as either too much wet, or too much drinesse shall hinder you from ploughing, you shall then looke into your Corne fields, that is to say: first into your Wheat and Rye field, and if there you shall finde any store of weedes, as Thistle, Darnell, Tare, Cockle, or such like, you shall with weede-hookes, or nippers of wood, cut, or plucke them up by the rootes: and also if you finde any annoyance of stones, which hinders the growth of your Corne, as generallie when it happens in this soyle, you shall then cause some Boyes and Girles, or other waste persons, to gather them up, and lay them in heapes at the lands ends, to bee imployed either about the mending of high wayes or other occasions, and for this purpose there is a generall custome in most Villages, that every Houshold'er is bound to send out one servant to be imployed about this businesse: whence it comes to passe, that it is called common worke, as being done at the generall charge of the whole Parish. After you have weeded your Wheat and Rye, you shall then weede your Barley also, which being finished about the midst of July, you shall then begin to looke into your Medowes, and to the preparing of your Hay-harvest.

Of Summer-stirring.

Of weeding.

Of stone gathering.

Road mending

Of soyling.

Now at such time as either the unseasonablenesse of the weather, or the growth of your grasse shall hinder you from

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from following that buſineſſe of Harveſt, you ſhall then looke into your fallow or tilth field againe, and whereas before at your Summer-ſtirring you ploughed your land upward; now you ſhall begin to foile, that is to ſay, you ſhall caſt your land againe, and open the ridge: and this Ardor of all other Ardors you muſt by no meanes neglect upon the gray, white Clay, becauſe it being moſt ſubject unto weede, and the hardeſt to bring to a fine mould, this Ardor of all others, doth both conſume the one, and makes perfect the other, and the drier Seaſon you doe foile your land in, the better it is, and the more it doth breake and ſmder the clots in pieces: for as in Summer-ſtirring the greater clots you raiſe up, and the rougher your land lies the better it is, becauſe it is a token of great ſtore of mould; ſo when you foile, the more you breake the clots in pieces, the better ſeaſon will your land take, and the richer it will be when the ſeede is ſowne into it: And the ſeaſon for the foiling of this ſoile is from the midſt of July till the midſt of September.

Now albe I have omitted the Manuring of this land in his due place, as namely, from the midſt of Aprill, till the end of May, yet you ſhall underſtand that of all other things it is not in any wiſe to bee neglected by the carefull *Husbandman*, both becauſe the ſoyle being not ſo rich as the blacke Clay, will very hardly bring forth his ſeede without Manure, and alſo becauſe it is for the moſt part ſubject unto much wet, and ſtones, both which are ſignes of cold and barrenneſſe. Now for thoſe Manures, which are beſt and moſt proper for this ſoile, you ſhall underſtand that all thoſe which I formerlie deſcribed for the blacke Clayes, as namely, Oxe or Cowes dung, Horſe dung and Sheepes dung, are alſo very good for this ſoile, and to be uſed in the ſame manner as is ſpecified in the former Chapter: but if you have not ſuch ſtore of this Manure as will ſerve to compaſſe your whole land, you ſhall then underſtand, that the blacke mud, or durt which lies in the bottome of olde ponds, or elſe ſtanding lakes, is alſo

Of Manuring.

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a very good Manure for this soile, or else straw which is spread in high-wayes, and so rotted by the great concourse or use of much travelling, and after in the Spring-time shovelled up in great heapes, is a good Manure for this earth: but if you finde this soile to be subject to extraordinarie wet and coldnesse, you shall then know that the ashes either of wood, coale, or strawe, is a very good Manure for it. But above all other, and then which there is no Manure more excellent for cold and barraine clayes of this nature, the Pigions dung, or the dung of houshold Pullen, as Capons, Hennes, Chickins, Turkies, and such like, so there be no Goose-dung amongst it, is the best of all other: but not to be used in such sort as the other Manures, that is to say, to be laid in great heapes upon the land, or to be spread from the Cart upon the land, for neither is there such abundance of such Manure to be gotten, nor if there were, it would not be held for good Husbandrie to make lavish havock of a thing so precious.

The use of Pigion or Pullen-dung.

You shall then know that for the use of Pigion or Pullen-dung, it is thus: you shall first with your hand breake it as small as may bee, and then put it into the Hopper, in such sort as you put your Corne when you sowe it: and then looke how you sowe your Corne, in such sort you shall sowe your Pigion or Pullen-dung: which done, you shall immediately put your Barley into the same Hopper, and so sowe it after the Pigions or Pullen-dung: by which you are to understand that this kinde of manuring is to bee used onely in Seede-time, and at no other season. This Manure is of the same nature that sheepes Manure is, and doth last but onely for one yeere, onely it is much hotter, as being in the greatest extreamitie of heat. Now if it happen that you cannot get any of this Pigions or Pullen-dung, because it is scarce, and not in everie mans power; if then you take Lime and sowe it upon your land in such sort as is before said of the Pigions-dung, and then sowe your Corne after it, you shall finde great profit to come thereon, especially in colde wet soiles, such

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as for the most part, these gray white clayes are.

After your Land is soild, which worke would bee finished by the middest of September, then you shall begin to sowe your Wheat, Rye, and Maslin, which in all things must bee done as is before set downe for the blacke Clay, the choise of seede, and every observation being all one: for Wheat not taking delight in a very rich ground, doth prosper best upon this indifferent soile. Whence it comes that in these gray white clayes, you shall for the most part see more Wheat sowne, then any other Graine whatsoever. But as touching your Rye and Maslin, that ever desires a rich ground and a fine mould, and therefore you shall make choise of your better earth for that Seede, and also observe to helpe it with Manure, or else sheepes-folding, in such manner as is described in the former Chapter, where I spake of the sowing of Wheate, Rye, and Maslin. Of sowing Wheat.

As soone as you have sowne your Wheat, Rye, and Maslin, you shall then about the latter end of October, begin to Winter ridge, or set up your land for the whole yeere: which you shall doe in all points, as you doe upon the black Clay, without any change or alteration. And the limitation for this Ardor, is, from the latter end of October, untill the beginning of December, wherein your yeeres worke is made perfect and compleat. Of Winter-ridging.

Now you shall understand, that although I have in this generall sort passed over the Ardors and severall Earings of this white or gray Clay, any of which are in no wise to be neglected: yet there are sundrie other observations to bee held of the carefull *Husbandman*, especially in the laying of his land: as thus, if the soile be of good temper, fruitfull, drie, and of a well mixed mould, not being subject to any naturall Spring or casting forth of moisture, but rather through the native warmth, drying up all kinde of Fluxes or colde moistures, neither binding or strangling the Seede, nor yet holding it in such loosenesse, that it lose his force of encreasing, in this case it is best to lay your lands flat and Observation.

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and levell, without ridges or furrowes, as is done in manie parts of Cambridge-shire, some parts of Essex, and some parts of Hartford-shire: but if the Clay bee fruitfull and of good temper, yet either by the bordering of great hills, the over-flow of small Brookes, or some other casuall meanes, it is subject to much wet or drowning, in this case you shall lay your lands large and high, with high ridges and deepe furrowes, as generally you see in Lincolne-shire, Nottingham-shire, Huntington-shire, and most of the middle Shires in England. But if the land be barraine, colde, wet, subject to much binding, and doth bring forth great store of weedes; then you shall lay your land in little stiches, that is to say, not above three or foure furrowes at the most together, as is generally seene in Middlesex, Hartford-shire, Kent, and Surrey: for by that meanes neither shall the land binde and choake the Corne, nor shall the weede so overrunne it, but that the *Husbandman* may with good ease helpe to strengthen and cleanse it, the many furrowes both giving him many passages, whereby hee may correct those enormities, and also in such sort convaying away the water and other moistures, that there cannot bee made any land more fruitfull.

Contradictory

Of the Plough. Now to speake of the Plough which is best and most proper for this gray or white Clay, of which wee now speake, you shall understand that it differeth exceeding much from that of which we spake concerning the blacke Clay: I, and in such sort, that there is but smal alliance or affinity between them: as thus for example:

First, it is not so large and great as that for the blacke Clay: for the head thereof is not above twentie inches in length, and not above one inch and a halfe in thickneſſe, the maine beame thereof is not above five foote long, and the rest is broader by an inch and more then that for the blacke Clay: this Plough also hath but one hale, and that is onelie the left hand Hale: for the Plough-staffe, or Aker-staffe serveth ever in stead of the right hand Hale, so that the Rough-staves are fixed, the upper unto the shel-

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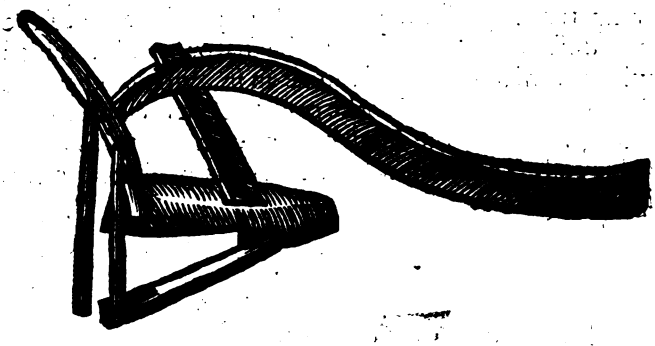
ſhel-board, and the neather unto the Plough-reſt, as for your better underſtanding you may perceive by this figure.

The Plough with one Hale.



Now you ſhall underſtand that the eſpeciall care which is to be held in the making of this Plough, is, that it be wide and open in the hinder part, that it may turne and lay the furrowes one upon another: whereas if it ſhould bee any thing ſtraightned in the hinder part, conſidering that this Clay naturally is ſomewhat brittle of it ſelfe, and that the furrowes which you plough muſt of neceſſitie be very narrow and little, it were not poſſible ſo to lay them, but that they would fall downe back againe, and inforce the Ploughman to loſe his labour. Alſo you ſhall underſtand that whereas in the former Plough, which is for the blacke Clay, you may turne the ſhelboard, that is, when the one end is worne, you may eſt-ſoones turne the other, and make it ſerve the like ſeaſon: in this Plough you muſt never turne the ſhelboard, becauſe the riſing wing of the Share will ſo defend it, that it will ever laſt as long as the Plough-head, without change or turning.

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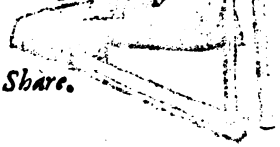
Now for the Irons belonging unto this Plough, which is the Share and Coulture, there is more difference in them then in the Plough: for to ſpeake firſt of the Share, whereas the former Share for the blacke Clay, was made broad, plaine, and with a large wing, this Share muſt bee made narrow, ſharpe, and ſmall, with no wing at all, having from the upper part thereof, cloſe by the ſhelboard, a certaine riſing wing, or broad piece of Iron, which comming up, and arming that part of the ſhelboard which turnes over the land, defends the wood from the ſharpe mould, which having the mixture of pible ſtone in it, would otherwiſe in leſſe then one dayes worke conſume the ſhelboard unto nothing, forcing the Plough-man to much trouble and double coſt. The faſhion of the Share is preſented in this Figure following.



The Share.

This Share is onely made that it may take a ſmall furrow, and ſo by breaking the earth oftner then any other Share, cauſeth the land to yeeld a good and plentifull mould, and alſo keepes it from binding or choaking the ſeed when it is caſt into it.

Now for the Coulture, it differeth from the former Coulture both in breadth and thickneſſe, but eſpecially in compaſſe: for whereas the former Coulture for the blacke Clay, was made ſtraight, narrow, and thicke, this muſt be compaſſed like an halfe bent bow: it muſt be broader then three fingers, and thinner then halfe an inche, according to this Figure.

The

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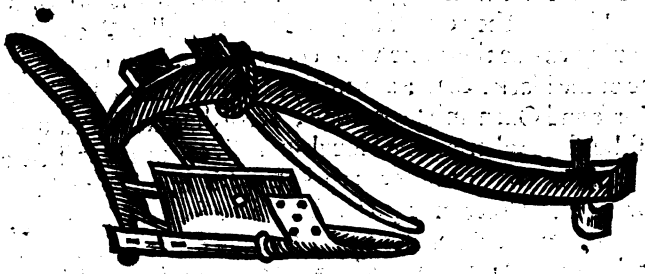
The Coulture.

Now when these Irons, the Shelboard, and other implements are fixed unto the Plough, you shall perceive that the Plough will carry the proportion of this Figure following.

The Plough for the gray Clay.



Having thus shewed you the substance, difference, and contraries of these two Ploughes, which belong to these two severall Clayes, the blacke and gray, you shall understand that there is no Clay-ground whatsoever, which is without other mixture, but one of these Ploughes will sufficiently serve to eare and order it: for all Clayes are of one of these tempers.

Now for the use and manner of handling or holding this Plough, it differeth nothing in particular observation from the

The use and handling.

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the use and handling of the Plough formerly described, more then in the largenesse and smalnesse of the furrowes: for as before I said, whereas the blacke Clay must be raised with a great furrow, and a broad stitch, this gray Clay must be raised with a small furrow, and a narrow stitch: and although this Plough have nothing but a left hand Hale, yet considering the Plough-staffe, upon which the Plough-man resteth his right hand, it is all one as if hee had a right. And indeede, to make your knowledge the more perfect, you shall know that these gray Clayes are generally in their owne natures so wet, tough, and slymie, and doe so clogge, cleave, and choake up the Plough, that hee which holds it, shall have enough to do with his right hand onely to cleanse and keepe the Plough from choaking, insomuch that if there were another Hale, yet the Plough-man should have no leasure to hold it.

Of the draught or Teame.

Now for the Draught or Teame which should draw this Plough, they ought in all points, as well in strength as tryving to bee the same with those before shewed for the use of the blacke Clay: as namely, either Oxen or Horse, or Horse and Oxen mixt together; according to the custome of the soile wherein the Plough-man lives, or his abilitie in provision, observing ever to keepe his number of beasts for his Plough certaine, that is to say, for fallowing, and Pease-earth, never under sixe, and for all other Eardors foure at the least. And thus much for the ploughing of this gray or white Clay.

CHAP.

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CHAP. X.

The manner of ploughing the red-Sand, his Earings, Plough, and Implements.

NExt unto these Clayes, which are soiles simple and uncompound, as being perfect in their owne natures, without the helpe of other mixtures, I place the Sand soiles, as being of like quality, not borrowing any thing but from their owne natures, nor breeding any defects more then their owne naturall imperfections: And of Sands, sith the red Sand is the best and most fruitfull, therefore it is fit that it take priority of place, and be here first spoken of.

You shall then understand that this red Sand, albeit it is the best of Sands, yet it is the worst of many soiles, as being of it selfe of such a hot and dry nature, that it scorcheth the seede, and drieth up that nutriment and fatnesse which should occasion encrease: whereby it comes to passe, that the Barley which growes upon this red Sand, is ever more yellow, leane and withered, then that which growes upon the Clayes or other mixt earths. This Sand especially taketh delight in Rye, because it is a Graine which loves warmth above all other; and yet notwithstanding, if it be well ordered, manured and ploughed, it will bring forth good store of Barley, albeit the Barley be not so good as Clay-Barley, either for the colour, or for the yeeld, whether it bee in Meale or in Malt.

Now for the manner of Earing or ploughing this red Sand, it differeth much from both the former soyles, insomuch that for your better understanding, I must in many places alter my former methode, yet so little as may be, because I am loath to alter or clog the memory of the Reader: wherefore to pursue my purpose. As soone as Christmas is ended, that is to say, about the middest of January, you shall goe with your Plough into that field where the Harvest be- Of fallowing.

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fore, did grow your Rye, and there you shall in your ploughing cast your lands downe-ward, and open the ridges well, for this yeere it must be your fallow field: for as in the former soiles, we did divide the fields either into three parts, that is, one for Barley and Wheate, another for Pease, and the third fallow, which is the best division: or into foure parts, that is, one for Wheat and Rye, another for Barley, a third for Pease, and a fourth fallow, which is the worst division and most toilesome, so in this red Sand soile, wee must ever divide it into three parts, that is, one for Barley, another for Rye, and a third fallow. For this Sand-soile being hot, drie, and light, will neither bring forth good Beanes nor good Pease, and therefore that Ardor is in this place but onely to be spoke of by way of discourse in urgent necessity.

Wherefore (as before I said) about the middest of Januarie you shall begin to lay fallow that field, where formerly did growe your Rye, the manner of ploughing whereof differeth nothing from the manner of ploughing the Clayes before written of, onely that the discretion of the Plough-man must this farre forth governe him, that in as much as this soile is lighter, dryer, and of a more loose temper, by so much the more hee must be carefull to make his furrowes lesse, and to lay them the closer together: and also in as much as this soile, through his naturall warmth and temperate moisture, is exceeding apt to bring forth much weede, especially Brakes, Ling, Brambles, and such like, therefore the Plough-man shall bee very carefull to plough all his furrowes very cleane, without baulkes or other impediments by which may be ingendred any of these inconveniences.

Of Spring-foyling.

After you have thus broke up and fallowed your fallow or tilth-field, the limitation of which time is from the middest of Januarie untill the middest of Februarie, you shall then at the middest of Februarie, when the Clay-men begin to sowe their Beanes and Pease, goe with your Plough into your other fallow-field, which all the yeere before hath laine fallow

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fallow, and already received at your hands at least foure severall Ardors; as Fallowing, Summer-stirring, Foyling, and Winter-ridging; and there you shall plough all that field over the fift time, which is called the Spring-foyling: and in this Ardor you shall plough all your lands upward, in such sort as when you Winter-ridge it, by which meanes you shall plough up all those weedes which have sprung forth in the Winter season. For you must understand that in these light, hot, sandy soiles, there is a continuall spring (though not of good fruits) yet of weeds, quicks, and other inconveniences: for it is a rule amongst *Husbandmen*, that warme soiles are never idle, that is, they are ever bringing forth something.

Now the limitation for this Ardor is from the middest of Februarie untill the middest of March, at which time you shall, by comparing former experience with your present judgement, take into your consideration the state, goodnesse, and powerfulnesse of your land, I meane especially of this fallow-field, which hath laine fallow the yeere before, and hath now received five Ardors: and if you finde any part of it, either for want of good ordoring in former times, or for want of Manure in the present yeere, to bee growne so leane and out of heart, that you feare it hath not strength enough to beare Barley, you shall then at this time, being the middest of March, sowe such land with Rye, which of *Husbandmen* is called the sowing of March-Rye: and this Rye is to bee sowne and harrowed in such sort as you did sowe it upon the Clay soiles, that is to say, above furrow, and not under furrow, except the land be very full of quickes; that is, of Brakes, Ling, Brambles, Dockes, or such like, and then you shall first with a paire of Iron Harrowes, that is, with Harrowes that have Iron teeth, first of all harrow the land over, and by that meanes teare up by the roots all those quickes, and so bring them from the land: which done, you shall sowe the land over with Rye, and then plough it downeward which is under furrow: and as soone as it is ploughed, you shal then with a paire of Iron Harrowes.

Of Sowing March-Rye.

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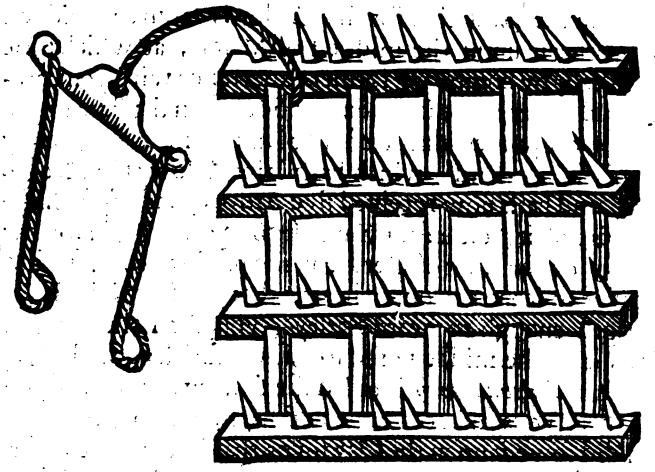
Harrowes harrow it all over so exceedingly, that the mould may bee made as fine, and the land lie as smooth as is possible.

Of the Harrow.

Now because I have in the former Chapters spoke of Harrowes and harrowing, yet have not delivered unto you the shape and proportion thereof, and because both the woodden Harrow and the Iron Harrow have all one shape, and differ in nothing but the teeth onely, I thinke it not amisse before I proceede any further to shew you in this Figure the true shape of a right Harrow.

The Harrow.



The parts of this Harrow consisteth of buls, staves, and teeth: of buls, which are broad thicke pieces, either of well seasoned Willow, or Sallow, being at least three inches every way square, into which are fastned the teeth: of staves, which are round pieces of well seasoned Ash, being about two inches and a halfe about, which going thorow the buls, holde the buls firmely in equall distance one from the other: and of teeth, which are either long pinnes of

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of wood or Iron, being at least five inches in length, which are made fast, and set slope-wise through the buls.

Now you shall understand that Harrowes are of two kindes, that is, single and double: the single Harrow is called of *Husbandmen* the Horse-Harrow, and is not above foure foote square: the double Harrow is called the Oxe-harrow, and it must be at least seaven foote square, and the teeth must ever be of Iron. Now whereas I spake of the Horse-harrow and the Oxe-harrow, it is to be understood that the single Harrow doth belong to the Horse, because Horses drawing single, doe draw each a severall Harrow by himselfe, albeit in the common use of harrowing we couple two horses ever together, & so make them draw two single Harrowes: but Oxen not being in good Husbandrie to be separated, because ever two must draw in one yoake, therefore was the double Harrow devised, containing in substance and worke as much as two single Harrowes. The diversi of Harrowes.

Now for the use of Harrowes. The woodden Harrow which is the Harrow with woodden teeth, is ever to be used upon clay grounds and light grounds, which through drinesse doth growe loose, and falls to mould of it owne nature, as most commonly Sand grounds doe also; and the Iron Harrow which is the Harrow with Iron teeth, is ever to be used upon binding grounds, such as through drinesse growe so hard that they will not be sundered, and through wet turne soone to mire and loose durt. Now whereas there be mingled earths, which neither willingly yeeld to mould, nor yet bindes so sore, but small industry breaks it, of which earth I shall speake hereafter, to such grounds the best Husbands use a mixture, that is to say, one woodden Harrow, and one Iron Harrow, that the woodden Harrow turning over, and loosening the looseſt mould, the Iron Harrow comming after, may breake the stiffer clots, and so consequently turne all the earth to a fine mould. And thus much for Harrowes. The use of Harrowes.

Now to returne to my former purpose touching the tillage of this red Sand: if (as before I said) you finde any Of the sowing of Pulse.

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part of your fallow-field too weake to beare Barley, then is your March-Rye, a graine which will take upon a harder earth: but if the ground be too weake either for Barley or Rye, (for both those Seedes desire some fatnesse of ground) then shall you spare ploughing it at all untill this time of the yeere, which is mid-March, and then you shall plough it, and sowe it with either the smallest Pease you can get, or else with our true English Fitches, which by forraine Authors are called *Lentles*, that is, White Fitches, or *Lupines*, which are red Fitches: for all these three sorts of Pulse will growe upon very barraine soiles, and in their growth doe Manure and make rich the ground: yet your Pease desire some heart of ground, your *Lentles*, or white Fitches, lesse, and your *Lupines*, or red Fitches, the least of all, as being apt to growe upon the barraineſt soile: so likewise your Pease doe Manure barraine ground well, your *Lentles* better, and your *Lupines* the best of all.

Of Pease, Lentles, and Lupines.

Now for the nature and use of these graines, the Pease as all *Husbandmen* know, are both good for the use of man in his bread, as are used in Leicester-shire, Lincolne-shire, Nottingham-shire, and many other Countries: and also for Horses in their Provender, as is used generally over all England: for *Lentles*, or white Fitches, or the *Lupines* which are red Fitches, they are both indifferent good in bread for man, especially if the meale bee well scalded before it bee knodden (for otherwise the savour is exceeding ranke) or else they are a very good foode being sodden in the manner of Leape-Pease, especially at Sea, in long journeyes where fresh meate is most exceeding scarce: so that rather then your land should lye idle, and bring forth no profit, I conclude it best to sowe these Pulses, which both bring forth commodity, and also out of their owne natures doe Manure and inrich your ground, making it more apt and fit to receive much better Seede.

For the manner of sowing these three sorts of Pulse, you shall sowe them ever under furrow, in such sort as is described for the sowing of Pease and Beanes upon the white

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white or gray Clay, which is of indifferent drineſſe, and apt to breake.

Now the limitation for this Ardor or ſeede time, is from the middeſt of March, till the middeſt of Aprill: then from the middeſt of April, till the middeſt of May, you ſhall make your eſpeciall worke, to be onely the leading forth of your Manure to that field which you did fallow, or lay tilth that preſent yeere immediately after Chriſtmas, and of which I firſt ſpake in this Chapter. And herein is to bee underſtood, that the beſt and principalleſt Manure for this red-ſand, is the oldeſt Manure of beaſts which can bee gotten, which you ſhall know by the exceeding blackneſſe and rottenneſſe thereof, being in the cutting both ſoft and ſmooth, all of one ſubſtance. as if it were well compact morter, without any ſhew of ſtrawe or other ſtuffe which is unrotted, for this dung is of all the fatteſt and cooleſt, and doth beſt agree with the nature of this hot ſand. Next to the dung of beaſts, is the dung of Horſes if it bee olde alſo, otherwiſe it is ſomewhat of the hotteſt, the rubbiſh of old houſes, or the ſweepings of floores, or the ſcowrings of old Fiſh-ponds, or other ſtanding waters where beaſts and horſes are uſed to drinke, or be waſht, or whereunto the water and moiſture of dunghils have recourſe, are all good Manures for this red-ſand: as for the Manure of Sheepe upon this red-ſand, it is the beſt of all in ſuch places as you meane to ſowe Rye, but not fully ſo good where you doe intend to ſowe your Barley: if it be a cold moiſt red ſand (which is ſeldome found but in ſome particular low Countries) then it doth not amiſſe to Manure it moſt with Sheepe, or elſe with Chaulke, Lyme, or Aſhes, of which you can get the greateſt plentie: if this ſoile bee ſubject to much weede and quickes, as generally it is, then after you have torne up the weedes and quickes with Harrowes, you ſhall with rakes rake them together, and laying them in heapes upon the land, you ſhall burne them, and then ſpreading the aſhes, they will be a very good Manure, and in ſhort ſpace deſtroy the weedes alſo;

Of Manuring.

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likewise if your land bee much overgrowne with weedes, if when you sheare your Rie you leave a good long stubble, and then mowing the stubble, burne it upon the land, it is both a good Manure, and also a good meanes to destroy the weedes.

Of sowing Barley.

After your Manure is led forth, and either spread upon the lands, or set in great heapes, so as the land may be covered over with Manure (for it is to bee observed that this soile must bee throughly Manured) then about the middest of May, which is the time when this work should be finished, you shall repaire with your Plough into the other fallow field, which was prepared the yeere before for this yeeres Barley, and there you shall sowe it all over with Barley above furrow, that is to say, you shall first plough it, then sowe it, and after harrow it, making the mould as fine and smooth as may be, which is done with easie labour, because this sand of it owne nature is as fine as ashes.

Now the limitation for this seede time, is from the middest of May, till the middest of June, wherein if any man demaund why it should not bee sowne in March and April, according as it is sowne in the former soiles, I answere, that first this red land cannot bee prepared, or receive his full season in weather, and earings, before this time of the yeere, and next that these red sands, by how much they are hotter and drier then the other Clayes, by so much they may well stay the longer before they receive their seede, because that so much the sooner the seede doth sprout in them, and also the sooner ripen being kept warmer at the roote then in any cold soile whatsoever. As soone as the middest of June approacheth, you shall then begin to

Of Summer-stirring.

Summer-stirre your fallow field, and to turne your Manure into your land, in such sort as you did upon your Clay soiles, for this Ardor of Summer-stirring alereth in no soile, and this must be done from the middest of June, till the middest

Of sleighting.

of July, for as touching sleighting, clotting, or smoothing of this Barley field, it is seldome in use, because the fineness of the land will lay the land smooth enough without sleighting:

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sleighting: yet if you finde that any particular land lieth more rough then the rest, it shall not be amisse, if with your back Harrowes you smooth it a little within a day or two after it is sowne.

From the middest of July untill the middest of August, you shall foile and throw downe your fallow field againe, if your lands lie well and in good order, but if any of your lands doe lie in the danger of water, or by use of ploughing are growne too flat, both which are hinderances to the growth of Corne, then when you foile your lands you shall plough them upward, and so by that meanes raise the ridges one furrow higher. After you have foiled your land, which must be about the middest of August, then will your Barley be ready to mowe; for these hot foiles have ever an early Harvest, which as soone as it is mowne and carried into the Barne, forth-with you shall with all expedition carrie forth such Manure as you may conveniently spare, and lay it upon that land from whence you received your Barley, which is most barraine: and if you want Cart Manure, you shall then lay your fould of Sheepe thereupon, and as soone as it is Manured, you shall immediatly plough both it and the rest, which Ardor should bee finished by the middest of September, and so suffered to rest untill the beginning of October, at which time you shall begin to sowe all that field over with Rye in such sort as hath beene spoken of in former places. Of Foiling. Of sowing Rye.

Now in as much as the ignorant *Husbandman* may very easily imagine that I reckon up his labours too thicke, and therein leave him no leasure for his necessarie businesses, especially because I appoint him to foile his land from the middest of July, till the middest of August, which is both a busie time for his Hay-Harvest, and also for his Rye shearing. Objection.

To this I make answere, that I write not according to that which poore men are able (for it were infinite to looke into estates) but according as every good Husband ought, presupposing that hee which will live by the Plough, ought Answere.

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to pursue all things belonging unto the Plough, and then he shall finde that there is no day in the yeere, but the Sabboth, but it is necessary that the Plough be going: yet to reconcile the poore and the rich together, they shall understand, that when I speake of ploughing in the time of Harvest, I doe not meane that they should neglect any part of that principall worke, which is the true recompence of their labour: but because whilst the dewe is upon the ground, or when there is either raine or mizling, there is then no time for Harvest worke, then my meaning is, that the carefull *Husbandman* shall take those advantages, and rising earlier in the mornings, be sure to be at his Plough two houres before the dewe bee from the ground, knowing that the getting but of one houre in the day compasseth a great worke in a moneth, neither shall hee neede to feare the over-toiling of his cattell, sith at that time of the yeere grasse being at greatest plenty, strongest and fullest of heart, Corne scattered almost in every corner, and the mouth of the beast not being muzeld in his labour, there is no question but hee will endure, and worke more then at any other season.

Of Winter-ridging.

In the beginning of November, you shall begin to Winter-ridge your fallow, or tilth field, which in all points shall bee done according to the forme described in the former soiles: for that Ardor of all other never altereth, because it is as it were a defence against the latter Spring, which else would fill the lands full of weedes, and also against the rigour of Winter, and therefore it doth lay up the furrow close together, which taking the season of the frost, winde, and weather, makes the mould ripe, mellow, and light: and the limitation for this Ardor, is from the beginning of November, untill the middest of December.

Of the Plough.

Now as touching the Plough which is best and most proper for this red-sand, it differeth nothing in shape and composure of members from that Plough which is described for the blacke Clay, having necessarily two Hales, because the ground being loose and light, the Plough will with great difficultie

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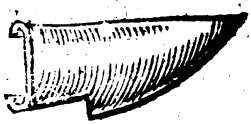
difficultie hold land, but with the leaſt diſorder bee ever ready to runne into the furrow, ſo that a right hand Hale is moſt neceſſary for the holding of the Plough even, onely the difference of the two Ploughes conſiſteth in this, that the Plough for this red-ſand, muſt bee much leſſe then the Plough for the blacke Clay, holding in the ſizes of the timber the due proportion of the Plough for the white or gray Clay, or if it be ſomewhat leſſe, it is not amiſſe, as the head being eighteene inches, the maine beame not above foure foote, and betweene the hinder part of the reſt, and the outmoſt part of the Plough-head in the hinder end not above eight inches.

Now for the Plough-Irons which doe belong unto this Plough, the Coulture is to be made circular, in ſuch proportion as the Coulture for the gray, or white Clay, and in the placing, or tempering upon the Plough, it is to be ſet an inch at leaſt lower then the Share, that it may both make way before the Share, and alſo cut deeper into the land, to make the furrow have more eaſie turning. Of the Coulture.

Now for the Share, it differeth in ſhape from both the former Shares, for it is neither ſo large nor out-winged, as that for the gray Clay, for this Share is onely made broad to the Plough ward, and ſmall to the point of the Share, with onely a little peake and no wing according to this figure. Of the Share.

The Share.



Theſe Plough-Irons, both Coulture and Share, muſt bee well ſteeled and hardned at the points, becauſe theſe ſandie toiles being full of moiſture and greete, will in ſhort ſpace weare and conſume the Irons, to the great hinderance and

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and coſt of the *Husbandman*, if it be not prevented by ſteele and hardning, which notwithſtanding wil waſt alſo in theſe ſoiles, ſo that you muſt at leaſt twiſe in every Ardor have your Irons to the Smith, and cauſe him to repaire them both with Iron and ſteele. Beſides theſe Irons, of Coultute and Share, you muſt alſo have a long piece of Iron, which muſt be juſt of the length of the Plough head, and as broad as the Plough head is thick, and in thickneſſe a quarter of an inch: and this piece of Iron muſt be nailed upon the out-ſide of the Plough head, next unto the land, onely to ſave the Plough head from wearing, for when the Plough is worne, it can then no longer hold the land, and this piece of Iron is called of *Husbandmen* the Plough-ſlip, and preſenteth this figure.

Of the Plough-ſlip.

The Plough-ſlip.

Of Plough-clouts.

Over and beſides this Plough-ſlip, there are certaine other pieces of Iron, which are made in the faſhion of broad thinne Plates, and they be called Plough Clouts, and are to be nailed upon the ſhelboard, to defend it from the earth or furrow which it turneth over, which in very ſhort ſpace would weare the wood, and put the *Husbandman* to double charge.

The holding of the Plough.

Thus having ſhewed you the parts, members, and implements, belonging to this Plough, it reſts that I proceede unto the teame or draught: for to ſpeake of the uſe and handling of this Plough, it is needleſſe, becauſe it is all one with thoſe Ploughes, of which I have ſpoken in the former Chapters, and hee which can hold and handle a Plough in ſtiffe Clayes muſt needes (except hee be exceeding ſimple) hold a Plough in theſe light ſands, in as much as the worke is much more eaſie, and the Plough a great deale leſſe chargeable.

Now

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Now for the Draught or Teame, they ought to bee as in the former Soiles, Oxen or Horſes, yet the number not ſo great: for foure Beaſts are ſufficient to plow any Ardor upon this ſoile, nay, three Horſes if they bee of reaſonable ſtrength, will doe as much as ſixe upon either of the Clay-ſoiles: as for their attire or Harneſſing, the Bearegeares, before deſcribed, are the beſt and moſt proper. And thus much concerning this red Sand, wherein you are to take this briefe obſervation with you, that the Graines which are beſt to be ſowne upon it, are onely Rye, Barley, ſmall Peaſe, *Lentles* and *Lupines*, otherwiſe called Fitchet, and the graines to which it is adverſe, are Wheat, Beanes and Maſlin. Of the Draught.

CHAP. XI.

The manner of plowing the white Sand, his Earings, Plough and Implements.

NExt unto this red Sand, is the white Sand, which is much more barraine then the red Sand, yet by the induſtry of the Husbandman in plowing, and by the coſt of Manure it is made to beare corne in reaſonable plenty. Now of white Sands there be two kindes, the one a white Sand mixt with a kinde of Marle, as that in *Norfolke*, *Suffolke*, and other ſuch like places butting upon the Sea-coaſt: the other, a white Sand with Pible, as in ſome parts of *Surrey*, about *Ancaſter* in *Lincolneſhire*, and about *Salisbury* in *Wiltſhire*.

Now for this white Sand with Pible, it is the barraineſt, and leaſt fruitfull in bringing forth, becauſe it hath nothing but a hot duſty ſubſtance in it. For the manner of Earing thereof, it agreeth in all points with the redde Sand, the Ardors being all one, the Tempers, Manurings, and all other appurtenances: the Seede alſo which it delights in, is all one with the redde Sand, as namely, Rye, Barley, Peaſe and Fitches. Wherefore who ſo ſhall dwell upon ſuch a ſoyle, Of the white Sand with Pible.

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I muſt referre him to the former Chapter of the red Sand, and therein he ſhall finde ſufficient inſtruction how to behave himſelfe upon this earth: remembring that in as much as it is more barraine then the red Sand, by ſo much it craveth more care and coſt, both in plowing and manuring thereof, which two labours onely make perfect the ill ground.

Of the white Sand with Marle.

Now for the white Sand which hath as it were a certaine mixture, or nature of Marle in it, you ſhall underſtand, that albeit unto the eye it be more dry and duſty then the red Sand, yet it is fully as rich as the red Sand: for albe it doth not beare Barley in as great plenty as the red Sand, yet it beareth Wheate abundantly, which the red Sand ſeldome or very hardly bringeth forth.

Of Fallowing.

Wherefore to proceede to the Earings or tillage of this white Marly ſand, you ſhall underſtand, that about the middeſt of *Ianuary* is fit time to beginne to fallow your field which ſhall be tilth and reſt for this yeare: wherein by the way, before I proceede further, you ſhall take this obſervation with you, that whereas in the former ſoiles I divided the fields into three and foure parts, this ſoile cannot conveniently, if it be well husbanded, be divided into any more parts then two, that is to ſay, a fallow field, and a Wheate-field: in which Wheate-field, if you have any land richer then other, you may beſtow Barley upon it, upon the ſecond you may beſtow Wheat, upon the third ſort of ground Rye, and upon the barraineſt, Peaſe or Fitches: and yet all theſe muſt be ſowne within one field, becauſe in this white Sand, Wheate and Rye will not grow after Barley or Peaſe, nor Barley and Peaſe after Wheate or Rye. Your fields being then divided into two parts, that is, one for corne, the other for reſt, you ſhall, as before I ſaid, about the middeſt of *Ianuary* beginne to fallow your Tithe-field, which in all obſervations you ſhall doe according as is mentioned for the red Sand.

Of ſowing of Peaſe.

About the middeſt of *March*, if you have any barraine or waſted ground within your fallow field, or if you have any

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any occaſion to breake up any new ground, which hath not beene formerly broken up, in either of theſe caſes you ſhall ſow Peaſe or Fitches thereupon, and thoſe Peaſe or Fitches you ſhall ſow under furrow as hath beene before deſcribed.

About the middeſt of *Aprill* you ſhall plow your fallow-field over againe, in ſuch manner as you plowed when you fallowed it firſt: and this is called Spring-fallowing, and is of great benefit becauſe at that time the weedes and quickes beginning to ſpring, nay, to flouriſh, by reaſon that the heate of the clime puts them forth ſooner then in other ſoiles, if they ſhould not be plowed up before they take too ſtrong roote, they would not onely over-runne, but alſo eate out the heart of the Land. Of Spring-fallowing.

About the middeſt of *May* you ſhall beginne to ſow your Barley upon the richeſt part of your old fallow field, which at the *Michaelmas* before, when you did ſow your Wheate, and Rye, and Maſlin, you did reſerve for that purpoſe: and this Barley you ſhall ſow in ſuch ſort as is mentioned in the former Chapter of the red Sand, in ſo much that this Ardor being finiſhed, which is the laſt part of your Seede-time, your whole field ſhall be furniſhed either with Wheate, if it hold a temperate fatneſſe, or with Wheate and Barley, if it bee rich and richer, or with Wheate, Barley and Pulſe, if it be rich, poore or extreame barraine: and the manner of ſowing all theſe ſeverall ſeeds is deſcribed in the Chapters going before. Of ſowing Barley.

About the middeſt of *June* you ſhall beginne to Summer-ſtirre your fallow-field, in ſuch ſort as was ſpoken of in the former Chapters concerning the other ſoiles: for in this Ardor there is no alteration of method, but onely in government of the Plough, conſidering the heavineſſe and lightneſſe of the earth. During this Ardor you ſhall buſily apply your labour in leading forth your Manure, for it may at great eaſe be done both at one ſeaſon, neither the Plough hindering the Cart, nor the Cart ſtaying the Plough: for this ſoile being more light and eaſie in worke Of Summer-ſtirring.

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then any other foile whatsoever, doth ever preserve so many Cattel for other imployment that both works may go forward together, as shall be shewed when we come to speake of the Plough, and the Teame which drawes it.

Of Manuring. Now as touching the Manures most fit for this soyle, they be all those of which we have formerly written, ashes onely excepted, which being of an hot nature, doe scald the Seede, and detaine it from all fruitfulnesse, being mixt with this hot soile, so is likewise Lyme, and the burning of stubble: other Manures are both good and occasion much fertility, as being of a binding and coole nature, and holding together that loosenesse which in his too much separation taketh all nutriment from the earth.

Of Weeding. After you have ledde forth your Manure, and Summerstind your Land, you shall then about the beginning of *July* looke into your Corne-field, and if you perceive any Thistles, or any other superfluous weedes to annoy your Corne, you shall then (as is before said) either cut, or pluck them up by the rootes.

Of Foyling. About the middest of *August* you shall beginne to foile or cast downe your fallow field againe, and in that Ardor you shall be very carefull to Plow cleane and leave no weedes uncut up: for in these hot soiles if any weeds be left with the least roote, so that they may knit and bring forth seede, the annoyance thereof will remaine for at least foure yeeres after, which is a double fallowing. And to the end that you may cut up all such weeds cleane, although both your Share and Coulture misse them, you shall have the rest of your Plough in the under part which strokes alongst the earth filled all full of dragges of Iron, that is, of olde crooked nailes, or great tenter-hookes, such as upon the putting downe of your right hand when you commence a weed shall catch hold thereof and teare it up by the rootes, as at this day is used by many particular Husbands in this Kingdome, whose cares, skils, and industries are not inferiour to the best whatsoever.

About the middest of *September*, you shall beginne to sow

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sow your Wheate and Rye upon your fallow-field, which Graine upon this soile is to be reckoned the most principall: and you shall sow it in the same manner that is described in the former Chapters, wherein your especialleſt care is the choise of your seede: for in this soile your whole-straw Wheate, nor your great Pollard taketh any delight, neither your Organe, for all those three must have a firme and a strong mould: but your Chiter-wheate, your Flaxen-wheate, your white-pollard, and your Red-wheate, which are the Wheates which yield the pureſt and fineſt meale, (although they grow not in so great abundance) are the seedes which are most proper and naturall for this soile. As for Rye or Maslin, according to the goodneſſe of the ground, so you shall bestow your seede: for it is a generall rule, that whereſoever your Wheate growes, there will ever Rye grow, but Rye will many times grow where Wheate will not prosper; and therefore for the sowing of your Rye, it must be according to the temper of the earth, and the neceſſity of your household: for Wheate being a richer graine then Rye, if you bee assured that your ground will beare Wheate well, it is small Husbandrie to sow more Rye or Maslin then for your house: but if it be too hot for Wheate, and kindly for Rye, then it is better to have good Rye, then ill Wheate. Now for the sowing of your Rye or Maslin in this soile, it differeth nothing from the former soiles, either in plowing or any other observation, that is to say, it must be plowed above furrow: for Rye being the most tender graine, it can neither abide the weight of earth, nor yet moisture; the one, as it were, burying, and the other drowning the vigour and strength of the seede.

Of Sowing Wheate and Rye.

The choice of Seede.

About the beginning of *November*, you shall Winter-ridge your fallow-field, I meane that part which you doe preserve for Barley (for the other part is furniſhed with seede) and this Winter-ridging differeth nothing from the Winter-ridging of other soiles, onely you shall a little more preciſely observe to set up your Lands more straight and high then in other soiles, both to defend them from wet,

Of Winter-ridging.

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which this soile is much subject unto, because commonly some great river is neere it, and also for the preserving of the strength and goodnesse of the Manure within the land which by lying open and unclosed would soone be washt forth and consumed.

Of the cleansing of lands, or drawing of water-furrows.

Now sith I have here occasion to speake something of the draining of lands, and the keeping of them from the annoyance of superfluous wet, whether it bee by inundation or otherwise, you shall understand, that it is the especiall office and duty of every good Husbandman, not onely in this soile, but in all other whatsoever, to have a principall respect to the keeping of his land dry, and to that end he shall diligently (as soone as he hath Winter-rigged his land) take a carefull view how his Lands lye, which way the descent goes, from whence annoyance of water may possibly come, and so consequently from those observations, with a Spade or strong Plough, of extraordinary greatnesse, draw certaine deepe furrowes from descent unto descent, by which meanes all the water may be conveyed from his lands, either into some common Sewer, Lake, Brooke, or other maine river: and to this end, it is both a rule in the common Lawes of our Land, and a laudable custome in the Common-wealth of every Towne, that for as much as many Townes have their Lands lye in common, that is to say, mixed neighbor with neighbor, few or none having above two or three lands at the most lying together in one place, therefore every man shall joyne, and make their water-furrowes one from another, untill such time as the water bee conveyed into some common issue, as well he whose lands lye without all danger, as hee that is troubled with the greatest annoyance, and herein every one shall beare his particular charge: which is an Act of great vertue and goodnesse.

Of the plough.

Now for the Plough which is to plow this white sand it doth differ nothing in size, proportion, and use of handling from the Plough described for the red Sand, onely it hath one addition more, that is to say, at the further end of the maine Beame of the Plough, where you fixe your

Plough-

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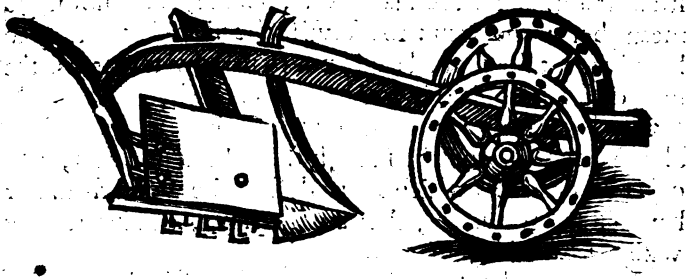
Plough-foot, there you shall place a little paire of round wheeles, which bearing the Beame upon a loose moving Axletree, being just the length of two furrows and no more, doth so certainly guide the Plough in his true furrow that it can neither lose the land by swerving (as in these light soiles every Plough is apt to doe) nor take two much land, either by the greedinesse of the Plough, or sharpnesse of the Irons, neither can it drowne through the easie lightnesse of the earth, nor run too shallow through the fussinesse of the mould, but the wheeles being made of a true proportion, which should not be above twelve inches from the centre, the Plough with a reasonable hand of government shall runne in a direct and even furrow: the proportion of which Plough is contained in this Figure.

The Plough with Wheeles.



This Plough of all others I hold to bee most ancient, and as being the model of the first invention, and at this day is preserved both in *France*, *Germany*, and *Italy*, and no other proportion of Ploughes knowne, both as we perceive by our experience in seeing them plow and also by reading of their writings: for neither in *Virgil*, *Columella* *Xenophon*, nor any old Writer; nor in *Heresbachius*, *Stevens*, nor *Libault*,

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Libault, being later Writers, finde wee any other Plough bequeathed unto our memories. Yet it is most certaine, that in many of our English soiles, this Plough is of little profit, as we finde by daily experience both in our clayes, and many of our mixt earths: for in truth this Plough is but onely for light, sandy, or gravelly soiles, as for the most part these forraine Countries are, especially about the sea-coast, or the borders of great Cities, from whence these Writers most generally tooke the presidents for their writings.

Now for the parts of this Plough, it consisteth of the same members which the former Ploughs doe, onely that in stead of the Plough-foote, it hath a paire of wheeles. It hath also but one Hale, in such sort as the Plough for the gray or white clay. The beame also of this Plough is much more straight then the former, by which meanes the Skeath is not full so long. The Irons belonging unto this plough are of the fashion of the former Irons, onely they be somewhat lesse, that is to say, the Couture is not so long, neither so full bent as that for the red Sand, nor so straight as that for the blacke clay, but as it were holding a meane betweene both: so likewise the Share is not fully so broad as that for the red sand, nor so narrow as that for the gray clay, but holds as it were a middle size betweene both, somewhat leaning in proportion to the shape of that for the blacke clay. As for the Plough-slip, Plough-clouts, and other implements which are to defend the wood from the hardnesse of the earth, they are the same, and in the same wise to be used those for the red Sand.

O the plough-Irons.

Now for the Draught or Teame which drawes this Plough, they are as in all other Draughts, Oxen or Horses, but for the number thereof they differ much from those which are formerly written of: for you shall understand that in this white sandy soile, which is of all soiles the lightest, either two good Horses, or two good Oxen are a number sufficient to plow any Ardor upon this soile whatsoever, as by daily experience we may see in those countries whose soile

Of the Draught.

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soile consists of this white light Sand, of which wee have now written: neither shall the Plow-man upon this soile neede any person to drive or order his Plough more then himselfe: for the soile being so light and easie to cut, the Plough so nimble, and the Cattell so few and so neere him, having ever his right hand at libertie (because his Plough hath but onely a left hand Hale) hee hath liberty ever to carry a goade or whip in his right hand, to quicken and set forward his Cattell, and also a line which being fastned to the heads of the Beasts, he may with it ever when he comes to the lands end, stop them and turne them upon which hand he pleases. And thus much for the tillage and ordering of this white Sand.

CHAP. XII.

The manner of plowing the mixt and compounded earthes, and first of the Gravell with Pible stones, or the Gravell with Flint, their Earings, Plough, and Implements.

HAving in the plainest manner I can, written sufficiently already of the foure simple and uncompounded soiles, to wit, two Clayes, blacke and gray, and two Sands, red and white, it now rests that I also give you some perfect touch or taste of the mixt or compounded soiles, as namely, the gravell which is a kinde of hard sand, clay and stone mixt together: and of Gravels there bee two kindes, that is to say, one that is mixt with little small Pible stones, as in many parts of *Middlesex*, *Kent*, and *Surrey*: and the Gravell mixt with broad Flints, as in many parts of *Hartford-shire*, *Essex*, and sundry such places. These Gravels are both, in generall, subject to much barrainnesse, especially if they be accompanied with any extraordinarie moysture, yet with the good labour of plowing, and with the cost of much Manure, they are

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brought to reasonable fruitfulnesse, where it comes to passe that the Plow-man which is master of such a soile, if either he live not neere some Citie or Market-towne, where great store of Manure, by the concourse of people, is daily bred, and so consequently is very cheape, or else have not in his owne store and breede, meanes to raise good store of Manure, hee shall seldome thrive and prosper thereupon. Now although in these gravell soiles there is a diversity of mixture, as the one mingled with small Pibles, which indeede is the worst mixture, the other with broad Flints, which is the better signe of fruitfulnesse: yet in their order of tillage or Earings, in their weeding and cleansing, and in all other Ardors and observations, they differ nothing at all, the beginning and ending of each severall worke being all one.

Now for the manner of worke belonging unto these two soiles, it altereth in no respect nor observation either in Plough, plowing, manuring, weeding, or any other thing whatsoever, from that of the white sand, the same times of the yeare, the same Seedes, and the same Earings being ever to be observed: wherfore it shall be needlesse to write so amply of these soiles as of the other, because being all one with the white Sand, without alteration, it were but to write one thing twice, and therefore I referre the Reader to the former Chapter, and also the Husbandman that shall live upon either of these soiles, onely with these few caveats: First, that for the laying his lands, hee shall lay them in little small stitches, that is, not having above foure furrowes laid together, as it were for one land, in such sort as you see in *Hartford-shire*, *Essex*, *Middlesex*, *Kent*, and *Surrey*: for this soile being for the most part subject to much moisture and hardnesse, if it should bee laid in great lands, according to the manner of the North-parts, it would over-burden, choak and confound the seed which is thrown into it. Secondly, you shall not goe about to gather off the stones which seeme as it were to cover the lands, both because the labour is infinite and impossible, and also because those

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thoſe ſtones are of good uſe, and as it were a certaine Manuring and helpe unto the ground: for the nature of this Gravell being cold and moiſt, theſe ſtones doe in the winter time, defend and keepe the ſharpneſſe of the Froſts and bleake windes from killing the heart or roote of the ſeedes, and alſo in the Summer it defends the ſcorching heate of the Sunne from parching and drying up the Seede, which in this gravelly ſoile doth not lye ſo well covered as in other ſoiles, eſpecially if this kind of earth bee invironed with any great hils (as moſt commonly it is) the reflection whereof makes the heate much more violent. And laſtly, to obſerve that there is no Manure better or more kindly for this kinde of earth then Chaulke, white Marle, or Lyme: for all other matters whatſoever the former Chapter of the white Sand, will give you ſufficient inſtructions.

CHAP. XIII.

The manner of plowing the blacke Clay mixt with red Sand, and the white Clay mixt with white Sand, their Earings, Plough, and Implements.

NExt to theſe gravelly ſoiles, there bee alſo two other compounded earths, as namely, the blacke Clay mixt with red Sand, and the white Clay mixt with white Sand, which albe they differ in compoſition of mould, yet they hold one nature in their Tillage and Husbandrie: wherefore firſt to ſpeake of the blacke Clay mixt with red Sand, which (as before I ſaid) is called of Husbandmen an haſſell earth, you ſhall underſtand that it is very rich and good ſoile, very fruitfull both for Corne and Graſſe: for Corne, being apt to beare any ſeede whatſoever; and for Graſſe, as naturally putting it forth very early in the yeare, by which your Cattell ſhall get reliefe ſooner then in other ſoiles of colder nature: for both the blacke and white Clayes doe ſeldome flouriſh with

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any ſtore of Graſſe before *Iune*, which is the time of woodſeare, and this ſoile will boaſt of ſome plenty about the beginning of *Aprill* at the furtheſt: but for Graſſe, we ſhall ſpeake in his proper place.

Of fallowing. Now for his tillage it is thus: you ſhall about the middeſt of *Ianuary*, beginne to fallow that field which you intend that yeare ſhall lye at reſt or tilth, and you ſhall fallow it in ſuch ſort as is ſpecified in the Chapter of the blacke clay: onely you ſhall take ſmall furrowes and plow the land cleane, being ſure to open and caſt the land downeward if the land lye high and round, otherwiſe you ſhall never at any time caſt the land downe but ridge it up, that is to ſay, when you fallow it, you ſhall caſt the firſt furrow downeward, and ſo likewiſe the ſecond, which two furrowes being cleane ploughed, will lay the land open inough, that is, there will be no part of the ridge unplough-ed: which done, by changing your hand and the gate of your Plough, you ſhall plow thoſe furrowes backe againe and lay them upward, and ſo plough the whole land upward, alſo laying it round and high: the reaſon for this manner of plowing being this, that for as much as this land being mixt of clay and ſand, muſt needes be a ſore binding land, therefore if it ſhould be laid flat, if any great raine or wet ſhould fall, and a preſent drought follow it, neither ſhould you poſſibly force your Plough to enter into it, and breake it, or being broken ſhould you get ſo much mould as to cover your Corne and give the ſeede comfort; whereas upon the contrary part, if it bee laid high and upright, it muſt neceſſarily bee laid hallow and light, in ſo much that you may both plough it at your pleaſure, and alſo beget ſo perfect a mould as any other ſoile whatſoever, both becauſe the wet hath liberty to avoide through the hollowneſſe, and alſo becauſe the Sunne and weather have power to enter and ſeaſon it, wherefore in concluſion you ſhall fallow this field downeward if it lie high and upright, otherwiſe you ſhall fallow it upward as the meanes to bring it to the beſt Ardor.

Now.

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Now for this fallow field, it muſt ever bee made where the yeare before you did reape your Peaſe, in caſe you have but three fields, or where you did reape your Wheat, Rye, and Maſlin, in caſe you have foure fields, according to the manner of the blacke clay.

About the middeſt of February, which is within a day or two of Saint *Valentines* day, if the ſeaſon bee any thing conſtant in faireneſſe and drineſſe, you ſhall then beginne to ſowe your Peaſe: for you muſt underſtand, that albeit this ſoyle will beare Beanes, yet they are nothing ſo naturall for it as Peaſe, both becauſe they are an hungry ſeed, and doe much impayre and waſte the ground, and alſo becauſe they proſper beſt in a fat, looſe, and tough earth, which is contrary to this hard and drie ſoyle: but eſpecially if you have foure fields, you ſhall forbeare to ſowe any Beanes at all, leſt you loſe two commodities, that is, both quantitie of graine, (becauſe Beanes are not ſo long and fruitfull upon this earth, as upon the clayes) and the Manuring of your ground, which Peaſe out of their owne natures doe, both by the ſmothering of the ground, and their owne fatneſſe, when your Beanes doe pill, and ſucke the heart out of the earth. Of ſowing Peaſe.

Now for the manner of ſowing your Peaſe, you ſhall ſow them above furrow, that is, firſt plough the land upward, then immediately ſow your Peaſe, and inſtantly after harrow them, the Plough, the Seeds-man, and the Harrower, by due courſe, following each other, and ſo likewiſe you may ſow Oates upon this ſoyle.

About the middeſt of March, which is almoſt a fortnight before our Lady day, you ſhall begin to ſowe your Barley, which Barley you ſhall ſowe neither under furrow, nor above, but after this order: firſt, you ſhall plough your land downeward, beginning at the furrow, and ſo aſcending upward to the ridge of the land, which as ſoone as you have opened, you ſhall then by pulling the Plough out of the earth, and laying the ſhelboard croſſe the ridge, you ſhall fill the ridge in againe with the ſame mould which Of ſowing Barley.

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you ploughed up: this done, your Seeds-man shall bring his Barley, and sowe the land above furrow: after the land is sowen, you shal then harrow it as small as may be, first with a paire of woodden Harrows, and after with a paire of yron Harrowes, or else with a double Oxe harrow; for this earth being somewhat hard and much binding, will aske great care and diligence in breaking.

Of sleighting. After your Barley is sowne, you shall about the latter end of *April* beginne to smooth and sleight your land, both with the backe Harrowes and with the rowler, and looke what clots they faile to breake, you shall with clotting beetles beate them asunder, making your mould as fine, and laying your Land as smoth as is possible.

Of Summer-stirring. About the middest of *May*, you shall, if any wet fall, beginne to Summer-stirre your Land, or if no wet fall, you shall doe your endeavour to Summer-stirre your Land, rather adventuring to breake two Ploughes, then to lose one day in that labour, knowing this, that one land Summer-stird in a dry season, is better then three Summer-stird in a wet or moist weather, both because it gives the earth a better temper, and kills the weedes with more assuredness, and as I speake of Summer-stirring, so I speake of all other Ardors, that the drier they are done, the better they are ever done: and in this season you shall also gather the Stones from your ground.

Objection. Now it may bee objected, that if it bee best to plow in drie seasons, it is then best to fallow also in a drie season, and by that meanes not to beginne to fallow untill the beginning of *May*, as is prescribed for the blacke clay, and so to deferre the Summer-stirring till the next month after, sith of necessitie *January* must either bee wette or else unkindely.

Answer. To this I make answere, that most true it is, that the land which is last fallowed is ever the best and most fruitfull, yet this mixt earth which is compound of sand and clay, is such a binding earth, that if it bee not taken and fallowed in a moist time of the yeare, as namely, in

January

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January or *Februarie*, but suffered to lye till *May*, at which time the drought hath so entred into him, that the greatest part of his moysture is decayed, then I say, the nature of the ground is such, and so hard, that it will be impossible to make any Plough enter into it, so that you shall not onely adventue the losse of that speciall Ardor, but also of all the rest which should follow after, and so consequently loose the profit of your Land: where contrariewise if you fallow it at the beginning of the yeare, as in *January*, and *Februarie*, albe they bee wette, yet shall you lay up your furrowes and make the earth more loose, by which meanes you shall compasse all the other Earings which belong to your soile: for to speake briefely, late fallowing belongs unto clayes, which by drought are made loose and light, and earely fallowings unto mixt soiles, such as these which by drinesse doe ingender and bind close together.

About the middest of *June*, you shall beginne to weede your Corne, in such sort as hath beene before described in the former Chapters: and although this soile naturally of it selfe (if it have received his whole Ardor in due seasons, and have beene Ploughed cleane, according to the office of a good Husband) doth neither put forth Thistle, or other weede, yet if it want either the one or the other, it is certaine that it puts them foorth in great abundance, for by Thistles and weeds, upon this soile, is ever knowne the goodnesse and diligence of the Husbandman. Of Weeding.

About the middest of *July*, you shall beginne to soile your land, in such sort as hath beene mentioned in the former Chapters, onely with this observation that if any of your lands lye flat, you shall then, in your soiling, plough those lands upward and not downeward, holding your first precept that in this soile, your lands must lye high, light, and hollow, which if you see they doe, then you may if you please in your soiling cast them downeward, because at Winter-ridging you may set them up againe. Of Soiling.

Now

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Of Manuring. Now for as much as in this Chapter I have hitherto omitted to speak of manuring this soile, you shall understand, that it is not because I hold it so rich that it needeth no Manure, but because I know there is nothing more needfull unto it then Manure, in so much that I wish not the Husbandman of this ground to binde himselfe unto any one particular season of the yeere for the leading forth of his Manure, but to bestow all his leasurable houres and rest from other workes onely upon this labour, even through the circuit of the whole yeare, knowing this most precisely, that at what time of the yeare soever you shall lay manure upon this earth, it will returne much profit.

As for the choyse of Manures upon this soyle, they are all those whatsoever, of which I have formerly intreated in any of the other Chapters, no Manure whatsoeuer comming amisse to this Ground: provided, that the Husbandman have this respect to lay upon his moysteſt and coldeſt ground his hotteſt Manures, and upon his hotteſt and drieſt earth his cooleſt and moysteſt Manures: the hot Manures being Sheepes-dung, Pigeons-dung, Pullen-dung, Lyme, Ashes, and such like: the coole being Oxe-dung, Horse-dung, the scourings of Ponds, Marle, and such like.

Of Winter-ridging. About the middeſt of *September* you shall beginne to Winter-ridge your land, which in all poinss you shall doe according as is mentioned in the former Chapters of the Clayes: for in this Ardor there is never any difference, onely this one small observation, that you may adventure to Winter-ridge this mixt earth sooner then any other: for many of our beſt English Husbandmen which live upon this soile doe hold this opinion, that if it be Winter-ridged so earely in the yeere, that through the vertue of the latter spring it put forth a certaine greene weede like mosse, being short and soft, that the land is so much the better therefore, being as they imagine both fed and comforted by such a slender expreſſion which doth not take from the land any heart, but like a warme covering doth ripen and make

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make mellow the mould, and this cannot be effected but onely by early Winter-ridging.

Of sowing of Wheate, Rye, and Maslin.

At the end of *September*, you shall beginne to sow your Wheate, Rye, and Maslin, all which Graines are very naturall, good, and profitable upon this soile, and are to bee sowne after the same manner, and with the same observations which are specified in the former Chapter of the blacke Clay, that is to say, the Wheate under furrow, and unharrowed, the Rye and Maslin above furrow, and well harrowed. And herein is also to bee remembred all those precepts mentioned in the Chapter of the blacke Clay, touching the division of the fields, that is to say, if you have three fields, you shall then sow your Wheate, Rye and Maslin in your fallow-field, and so save both the Feyling and double Manuring of so much earth: but if you have foure fields, then you shall sow those graines upon that land from whence the same yeare you did reape your Pease; your Wheate having no other Manure then that which came by the Pease, your Rye having, if possible, either Manure from the Cart, or from the Folde, in such sort as hath beene shewed in the Chapter of the blacke Clay, and this of Husbandmen is called Inam-wheate, or Inam-rye, that is, white-corne sowne after white-corne, as Barley after Barley, or hard-corne after hard-corne, which is, Wheate after Pease.

Of the plough.

Now for the Plough which is most proper for this soile it is to be made of a middle size betwixt that for the blacke Clay, and that for the red Sand, being not all out so bigge and unwieldy as the first, nor so slender and nimble as the latter, but taking a middle proportion from them both, you shall make your Plough of a competent fitnesse.

Of the plough-Irons.

As for the Irons, the Share must be of the same proportion that the Share for the red Sand is, yet a little thought bigger, and the Coulture of the fashion of that Coulture, onely not full so much bent, but all-out as sharpe and as long: and these Irons must bee ever well maintained with steele, for this mixt earth is ever the hardest, and

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weareth both the Plough and Irons soonest, and therefore it is agreed by all Husbandmen that this Plough must not at any time want his Plough-slip, except at the first going of the Plough you shall finde that it hath too much land, that is to say, by the crosse setting on of the beame, that it runneth too greedily into the land, which to helpe, you shall let your Plough goe without a Plough-slip, till the Plough-head be so much worne, that it take no more but an ordinary furrow, and then you shall set on your Plough-slips and Plough-clouts also: but I write this in case there be imperfection in the Plough, which if it bee otherwise, then this observation is needlesse.

Of the Teame. Now for the **Teame** or Draught which shall draw this Plough, they are as the former, Oxen and Horses, and their number, the same that is prescribed for the blacke Clay, as namely, eight or sixe Beasts for Pease-earth, for fallowing, and Summer-stirring; and sixe or foure for all other Ardors: for you must understand that this mixt and binding soile, through his hardnesse, and gluttenous holding together, is as hard to plow as any clay-soile whatsoever, and in some speciall seasons more by many degrees.

Of the white Clay with white Sand. Now for the white Clay mixt with white Sand, it is an earth much more barraine, then this former mixt earth, and bringeth forth nothing without much care, diligence, and good order: yet for his manner of Earings, in their true natures every way they differ nothing from the Earings of this blacke Clay and red Sand, onely the Seede which must be sowne upon this soile differeth from the former: for upon this soile in stead of Barley you must sow most Oates, as a Graine which will take much strength from little fertilitie: and in stead of Rye you shall sow more Wheate and more Pease, or in stead of Pease, then you shall sow Fitches of either kind which you please, and the increase will be (though not in abundance, yet) so sufficient as shall well quit the Plow-mans labour.

Of Manuring. Now for the Manuring of this ground, you shall understand that Marle is the chiefest: for neither will any man

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man ſuppoſe that this hard ſoile ſhould bring up Cattell ſufficient to Manure it, nor if it would, yet that Manure were not ſo good: for a barraine clay being mixt with a moſt barraine ſand, it muſt conſequently follow that the ſoile muſt be of al the barenneſt, inſomuch, that to give perfect ſtrength and life unto it, there is nothing better then Marle, which being a fat and ſtrong Clay, once incorperated within theſe weake moulds, it muſt needes give them the beſt nouriſhment, looſening the binding ſubſtance, and binding that weaknieſſe which occaſioneth the barrainneſſe: but of this Marle I ſhall have more occaſion to ſpeake heereafter in a particular Chapter, onely thus much I muſt let you underſtand, that this ſoile, albe it be not within any degree of praiſe for the bringing forth of Corne, yet it is very apt and fruitfull for the breeding of graſſe, inſomuch, that it will beare you corne for at leaſt nine yeares together (without the uſe of any fallow or Tilth-field) if it bee well Marled, and immediately after it will beare you very good breeding graſſe, or elſe reaſonable Medow for as many yeeres after, as by daily experience we ſee in the Countries of *Lancaſter* and *Cheſter*. So that the conſequence being conſidered, this ground is not but to be held indifferent fruitfull: for whereas other ſoiles afore ſhewed (which beare abundance of Graine) are bound to bee Manured once in three yeeres, this ſoile, albe it beare neither ſo rich graine, nor ſo much plenty, yet it needes Marling not above once in ſixteene or eighteene yeares: and albe Marle bee a Manure of the greateſt coſt, yet the profit by continuance is ſo equall that the labour is never ſpent without his reward, as ſhall more largely appeare hereafter.

As touching the Plough, it is the ſame which is mentioned in the other ſoile of the blacke Clay, and red Sand, altering nothing either in quantity of timber, or ſtrength of Irons: ſo that to make any large deſcription thereof, is but to double my former diſcourſes, and make my writings tedious. Of the plough.

For to conclude briefely, theſe two ſoiles differ onely

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but in fatnesse and strength of nature, not in Earing, or Plowing, so that the labours of tillage being equall, there is no any alteration more then the true diligence of much manuring, which will breed an affinitie or alliance betwixt both these Soiles. And thus much for this blacke Clay and red Sand, or white Clay and white Sand.

CHAP. XIV.

Of the manner of plowing the blacke Clay mixt with white Sand, and the white Clay mixt with red Sand: their Earings, Plough, and Implements.

AS touching the mixture of these two severall soyles, that is to say, the blacke Clay with white Sand, and the white clay with red Sand, they differ not in the nature of Plowing, Sowing, or in Manuring, from the Soile which is mixt of a blacke Clay and red Sand, of which I have sufficiently intreated before: onely thus much you shall understand, that the blacke Clay mixt with white sand is so much better and richer then the white Clay mixt with red Sand, by as much as the blacke clay is better then the white clay: and although some husbandmen in our Land, hold them to be both of one temper and goodnesse, reasoning thus, that by how much the black clay is better then the white, by so much the red sand is better then the white sand, so that what the mixture of the one addeth, the mixture of the other taketh away, and so maketh them all one in fruitfulnesse and goodnesse: but in our common experience it doth not so fall out, for we finde that the blacke clay mixt with white sand, if it be ordered in the forme of good Husbandry, that is to say, bee plowed over at least foure times, before it come to bee sowne, and that it bee manured and compassed in Husbandly fashion, which is to allow at least eight waine-load to an Aker, that if thereupon such Land you shall sow either Organe Wheat

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(in the South parts called red Wheat) or flaxen, or white Pollard Wheat, that such Wheat will often mildew, and turne as black as soot, which onely sheweth too much richnesse and fatnesse in the earth, which the white clay mixt with red sand hath never beene seene to doe, especially so long as it is used in any Husbandly fashion; neither will the white clay mixt with red sand indure to bee divided into foure Fields, that is to say, to beare three severall Crops, one after another, as namely, Barley, Pease and Wheat, without rest, which the black clay mixt with white sand many times doth, and thereby againe sheweth his better fruitfulnesse: nevertheleſſe, in generalitie I would not wish any good Husbandman, and especially such as have much tillage, to divide either of these soyles into any more then three fields, both because he shall ease himselfe and his Cattell of much toyle, shall not at any time lose the best seasons for his best workes, and make his commodities, and fruit of his hands labours, by many degrees more certaine.

You shall also understand, that both these soiles are very much binding, especially the white clay with red sand, both because the clay, proceeding from a chalkie and flinie substance, and not having in it much fatnesse or fertilitie (which occasioneth separation) being mixt with the red sand, which is of a much more hardnesse and apteneſſe to knit together, with such tough matter, it must necessarily bind and cleave together, and so likewise the black clay, from whence most naturally proceedeth your best lime-stone, being mixt with white sand, doth also binde together and stifle the seed, if it be not prevented by good husbandry.

You shall therefore in the plowing and earing of these two soyles, observe two especiall notes; the first, that by no meanes you plow it in the wet, that is, in any great glut of raine: for if you either lay it up or cast it downe, when it is more like morter then earth, if then any Sunneshine, or faire weather, doe immediately follow upon it, it will so drie and bake it, that if it be sowen, neither will the seed have strength to sprout thorow it, nor being in

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any of your other Summer ardors, shall you by any meanes make your plough enter into it againe, when the season falleth for other plowing. The second, that you have great care you lay your land high and round, that the furrowes, as it were standing upright one by another, or lying light and hollow one upon another, you may with more ease, at any time, enter in your plough, and turne your mould which way you please, either in the heat of Summer, or any other time of the yeare whatsoever.

Now as touching the Plough, which is most best and proper for these soyles, it would be the same in size which is formerly directed for the red Sand, onely the Irons must bee altered, for the Coulter would bee more long, sharpe, and bending, and the Share so narrow, sharpe and small as can conveniently be made, according as is formerly expressed, that not having power to take up any broad furrow, the furrowes by reason of their slendernesse, may lye many, and those many both hollow, light, and at any time easily to bee broken.

As for the Teame which is best to worke in this soyle, they may bee either Horses or Oxen, or Oxen and Horse mixt together, according to the Husbandmans abilitie; but if he be a Lord of his owne pleasure, and may command, and have every thing which is most apt and proper, then in these two soyles, I preferre the Teame of Horses single, rather then Oxen, especially in any winter or moyst ardor, because they doe not tread and foyle the ground, making it myrie and durtie as the Oxe doth, but going all in one furrow, doe keepe the Land in his constant firmnesse:

As touching the clotting, sleighting, weeding, and dressing of these two soyles, they differ in nothing from the former mixt earths, but desire all one manner of diligence: and thus much for these two soyles, the blacke clay mixt with white sand, and the white clay with white red sand.

CHAP.

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CHAP. XV.

A comparison of all the former soyles together, and most especiall notes for giving the ignorant Husbandman perfect understanding, of what is written before.

THE reason why I have thus at large discoursed of every severall Soyle, both simple and compounded, is to shew unto the industrious Husbandman, the perfect and true reason of the generall alteration of our Workes in Husbandry, through this our Realme of *England*: for if all our Land, as it is one Kingdome, were likewise of one composition, mixture, and goodnesse, it were then exceeding preposterous to see those diversities, alterations, and even contrary manners of proceedings in Husbandrie, which are daily and hourely used: but every man in his owne worke knowes the alteration of climates. Yet for so much as this labour of Husbandry, consisteth not for the most part in the knowing and understanding breast, but in the rude, simple, and ignorant Clowne, who onely knoweth how to doe his labour, but cannot give a reason why he doth such labour, more then the instruction of his parents, or the custome of the Country, where it comes to passe (and I have many times seene the same to mine admiration) that the skilfullest Clowne, which is bred in the Clay soyles, when he hath beene brought to the sandy ground, hee could neither hold the Plough, temper the Plough, nor tell which way in good order to drive the Cattell, the heavinesse of the one labour being so contrary to the lightnesse of the other, that not having a temperance, or understanding in his hands, hee hath beene put even unto his wittes ends; therefore I thinke it convenient, in this place, by a sleight comparison of soyles together, to give the simplest Husbandman such direct and plaine rules that hee shall

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ſhall without the ſtudy of his braines, attaine to abſolute knowledge of every ſeverall mixture of earth: and albeit hee ſhall not bee able diſtinctly to ſay at the firſt that it is compounded of ſuch and ſuch earthes, yet hee ſhall be very able to deliver the true reaſon and manner how ſuch ground (of what nature ſoever) ſhall be Husbanded and tilled.

Therefore to beginne, the Husbandman is to underſtand, that generally there are but two ſoyles for him to regard, for in them conſiſteth the whole Arte of Huſbandry: as namely, the open and looſe earth, and the cloſe and faſt binding earth, and theſe two ſoyles being meere oppoſites and contraries, moſt neceſſarily require in the Husbandman a double underſtanding, for there is no ſoyle, of what ſimplicity or mixture ſoever it be, but it is either looſe or faſt.

Now to give you my meaning of theſe two words, *looſe* and *faſt*, it is, that every ſoyle which upon parching and dry weather, even when the Sunne beames ſcorch, and as it were bake the earth, if then the ground upon ſuch exceeding drought doe moulder and fall to duſt, ſo that whereas before when it did retaine moyſture it was heavie, tough, and not to be ſeparated, now having loſt that glewineſſe it is light, looſe, and even with a mans foote to bee ſpurnd to aſhes, all ſuch grounds, are tearmed looſe and open grounds, becauſe at no time they doe binde in, or impriſon the ſeede (the froſt time onely excepted, which is by accidence, and not from the nature of the ſoyle:) and all ſuch grounds as in their moiſture, or after the fall of any ſodaine raine, are ſoft, plyable, light, and eaſie to bee wrought, but after, when they come to loſe that moiſtneſſe, and that the powerfulneſſe of the Sunne hath as it were, dryde up their veines, if then ſuch earthes become hard, firme, and not to be ſeparated, then are thoſe ſoiles tearmed faſt and binding ſoiles, for if their Ardors be not taken in their due times, and their ſeede caſt into them in perfect and due ſeaſons, neither is it poſſible for the

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the Plow-man to plow them, nor for the ſeede to ſprout through, the earth being ſo faſtned and as it were, ſtone-like fixt together. Now ſithence that all ſoyles are drawne into theſe two heads, faſtneſſe, and looſeneſſe, and to them is annexed the diverſitie of all tillage, I will now ſhew the ſimple Husbandman which earthes be looſe, and which faſt, and how without curioſitie to know and to diſtinguiſh them.

Briefely, all ſoyles that are ſimple and of themſelves uncompounded, as namely, all Clayes, as blacke, white, gray, or blew, and all Sands, as either red, white, or blacke, are open and looſe ſoyles: the Clayes becauſe the body and ſubſtance of them being held together by moiſtneſſe, that moiſture being dryed up, their ſtrength and ſtiſneſſe decayeth, and Sands by reaſon of their naturall lightneſſe, which wanting a more moiſt and fixt body to be joyned with them, doe looſe all ſtrength of binding or holding together. Now all mixt or compound earths (except the compoſitions of one and the ſame kindes, as clay with clay, or ſand with ſand) are ever faſt and binding earths: for betwixt ſand and clay, or clay and gravell, is ſuch an affinity, that when they be mixt together, the ſand doth give to the clay ſuch hardneſſe and dryneſſe, and the clay to the ſand ſuch moiſture and coldneſſe, that being fixt together they make one hard body, which through the warmth of the Sunne bindeth and cleaveth together. But if it bee ſo that the ignorance of the Husbandman cannot either through the ſubtiltie of his eye-ſight, or the obſervations gathered from his experience, diſtinguiſh of theſe ſoyles, and the rather, ſith many ſoyles are ſo indifferently mixt, and the colour ſo very perfect, that even skill it ſelfe may bee deceived: as firſt to ſpeake of what mixture ſome ſoyles conſiſt, yet for as much as it is ſufficient for the Husbandman to know which is looſe, and which is binding, he ſhall onely when he is perplext with theſe differences, uſe this experiment, he ſhall take a good lumpe of that earth whoſe temperature he would know, and working it with

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water and his wet hands, like a piece of paſte, he ſhall then as it were, make a cake thereof, and laying it before an hot fire, there let it lye, til all the moiſture be dried and baked out of it, then taking it into your hands, and breaking it in pieces, if betweene your fingers it moulder and fall into a ſmall duſt, then bee aſſured it is a looſe, ſimple, and uncompounded earth, but if it breake hard and firme, like a ſtone, and when you crumble it betweene your fingers, it be rough, greetie, and ſhining, then be aſſured it is a compounded faſt-binding earth, and is compounded of clay and ſand, and if in the baking it doe turne red or rediſh, it is compounded of a gray clay, and red ſand, but if it bee browne or blewiſh, then it is a black clay and white ſand, but if when you breake it you finde therein many ſmall Pibles, then the mixture is clay and gravell. Now there bee ſome mixt ſoiles, after they are thus bak't, although they bee hard and binding, yet they will not bee ſo exceeding hard and ſtone-like as other ſoyles will be, and that is where the mixture is unequall, as where the clay is more then the ſand, or the ſand more then the clay.

When you have by this experiment found out the nature of your earth, and can tell whether it be ſimple or compounded, you ſhall then looke to the fruitfulneſſe thereof, which generally you ſhall thus diſtinguiſh. Firſt, that clayes, ſimple, and of themſelves uncompounded, are of all the moſt fruitfull, of which, blacke is the beſt, that next to clayes, your mixt earthes are moſt fertile, and the mixture of the blacke clay, and red ſand, called a haſell earth, is the beſt, and that your ſands are of all ſoiles moſt barraine, of which the red ſand for profit hath ever the preheminence.

Now for the generall tillage and uſe of theſe grounds, you ſhall underſtand that the ſimple and uncompounded grounds, being looſe and open (if they lye free from the danger of water) the Lands may bee layd the flatteſt and greateſt, the furrowes turned up the largeſt and cloſeſt, and the Plough and Plough-Irons, moſt large and maſſie, onely

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onely those for the sandy grounds must bee more slender then those for the clayes, and much more nimble, as hath beene showed before. Now for the mixt earths, you shall lay your Lands high, round, and little, set your furrowes upright & open, and so small as is possible, and make your Plough and plow Irons most nimble and slender, according to the manner before specified: and thus I conclude, that he which knoweth the loose earth and the binding earth, can either helpe or abate the strengh of the earth, as is needfull, and knowes how to sort his Ploughes to each temper, knowes the ground and substance of all tillage.

CHAP. XVI.

Of the planting or setting of Corne, and the profit thereof.

Shadwell Sandy.

NOt that I am conceited, or carried away with any novelty or strange practice, unusually practiced in this kingdome, or that I will ascribe unto my selfe to give any judiciall approbation or allowance to things meerely unfrequented, doe I publish, within my booke, this relation of the setting of Corne, but onely because I would not have our English Husbandman to bee ignorant of any skill or obscure faculties which is either proper to his profession, or agreeable with she fertilitie and nature of our clymates, and the rather, since some few yeares agoe, this (as it then appeared secret) being with much admiration bruited through the kingdome, insomuch, that according to our weake accustomed dispositions (which ever love strange things best) it was held so worthy, both for generall profit and perticular ease, that very few (except the discreete) but did not alone put it in practice, but did even ground strong beliefes to raise to themselves great common-wealthes by the

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profits thereof; some not onely holding insufficient arguments, in great places, of the inutilitie of the Plough, but even utterly contemning the poore cart lade, as a creature of no necessitie, so that Poulters and Carriers, were in good hope to buy Horse-flesh as they bought Egges, at least five for a penny; but it hath proved otherwise, and the Husbandman as yet cannot loose the Horses service. But to proceede to the manner of setting or planting of Corne, it is in this manner.

Of setting Wheate.

Having chosen out an aker of good Corne ground, you shall at the beginning of *March*, appoynt at least sixe diggers or labourers with spades to digge up the earth Gardenwise, at least a foote and three inches deepe (which is a large spades graft) and being so digged up, to rest till *Iune*, and then to digge it over againe, and in the digging to Trench it and Manure it, as for a garden mould, bestowing at least sixteene Waine-load of Horse or Oxe Manure upon the aker, and the Manure to bee well covered within the earth, then so to let it rest untill the beginning of *October*, which being the time for the setting, you shall then digge it up the third time, and with rakes and beetles breake the moulde somewhat small, then shall you take a board of sixe foote square, which shalbe bored full of large wimble holes, each hole standing in good order, just sixe inches one from another, then laying the board upon the new digged ground, you shall with a stick, made for the purpose, through every hole in the board, make a hole into the ground at least foure inches deepe, and then into every such hole you shall drop a Corne of Wheate, and so removing the board from place to place, goe all over the ground that you have digged, and so set each severall Corne sixe inches one from another, and then with a rake you shall rake over and cover all the holes with earth, in such sort that they may not bee discerned. And herein you are to observe by the way that a quarte of Wheate will set your aker: which Wheate is not to bee taken as it falles out by chance when you buy it in

Drill.

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in the market, but especially culd and pickt out of the eare, being neither the uppermost Cornes which grow in the toppes of the eares, nor the lowest, which grow at the setting on of the stalke, both which, most commonly are light and of small substance, but those which are in the midst, and are the greatest, fullest, and roundest.

Of setting Barley, or Pease,

Now in the selfe-same sort as you dresse your ground for your Wheate, in the selfe same manner you shall dresse your ground for Barley, onely the first time you digge it shalbe after the beginning of *May*, the second time and the Manuring about the midst of *October*, wherein you shall note that to your aker of Barley earth, you shall allow at least foure and twentie Waine-load of Manure, and the last time of your digging and setting shalbe at the beginning of *Aprill*.

Now for the dressing of your earth for the setting of Pease, it is in all things answerable to that for Barley, onely you may save the one halfe of your Manure, because a dosen Waine-load is sufficient, and the time for setting them, or any other pulse, is ever about the midst of *February*.

Of the profit of setting Corne.

Now for the profit which issueth from this practise of setting of Corne, I must needs confesse, if I shall speake simply of the thing, that is, how many foulds it doubleth, and increaseth, surely it is both great and wonderfull: and whereas in generall it is reputed that an Aker of set Corne yeeldeth as much profit as nine Akers of sowne Corne, for mine owne part I have seene a much greater increase, if every Corne set in an Aker should bring forth so much as I have seene to proceed from some three or foure Cornes set in a Garden, but I feare mee the generalitie will never hold with the particular: how ever, it is most certaine, that earth in this sort trimmed and inriched, and Corne in this sort set and preserved, yeeldeth at least twelve-fold more commoditie then that which by mans hand is confusedly throwne into the ground from the Hopper: whence it hath come to passe that those which

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which by a few Cornes in their gardens thus ſet, ſeeing the innumerable increaſe, have concluded a publicke profit to ariſe there by to the whole kingdome, not looking to the intricacie, trouble, and caſualtie, which attends it, being ſuch, and ſo inſupportable that almoſt no Husbandman is able to undergoe it: to which wee neede no better teſtimony then the example of thoſe which having out of meere covetouſneſſe and lucre of gaine, followed it with all greedineſſe, ſeeing the miſchiefes and inconveniences which hath incountred their works, have even deſiſted, and forgotten that ever there was any ſuch practice, and yet for mine owne part, I will not ſo utterly condemne it, that I will deprive it of all uſe, but rather leave it to the diſcretion of judgement, and for my ſelfe, onely hold this opinion, that though it may very well be ſpared for the generall uſe of Wheate and Barley in this kingdome, yet for Haſtie-peaſe, French Beanes, and ſuch like pulſe, it is of neceſſary imployment, both in rich and poore mens gardens. And thus much for the ſetting of Corne.

CHAP. XVII.

Of the choice of Seed-corne, and which is beſt for which ſoyle.

HAving thus ſhowed unto you the ſeverall ſoyles and temperatures of our Engliſh land, together with the order of Manuring, dreſſing, and tillage of the ſame, I thinke it meete (although I have in generall writ ſomething already touching the ſeed belonging to every ſeverall earth) now to proceede to a particular election and choice of Seede-corne, in which there is great care and diligence to be uſed: for as in Men, Beaſts, Fowle, and every moving thing, there is great care taken for the choice of the breeders, becauſe the creatures bred doe ſo much participate of the parents that for the moſt part

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part they are seene not onely to carry away their outward figures and semblances, but even their naturall conditions and inclinations, good issuing from good, and evill from evill: so in the choise of Seed-corne, if there be any neglect or careleſſeneſſe, the crop issuing of such corrupt Seed, must of force bring foorth a more corrupt harvest, by as much as it exceedeth in the multiplication.

To proceede therefore, to the choyce of Seede-corne, I will begin with Wheate, of which there are divers kindes, as your whole straw Wheate, the great browne Pollard, the white Pollard, the Organe or read Wheate, the flaxen Wheate, and the chilter Wheate. Your whole strawe Wheate, and browne Pollard, are knowne, the first, by his straw, which is full of pith, and hath in it no hollowneſſe, whence it comes that Husbandmen esteeme it so much for their thacking, allowing it to be as good and durable as reede: the latter is knowne by his eare, which is great, white, and smooth, without anes or beard upon it: in the hand they are both much like one to another, being of all Wheates the biggeſt, roundeſt, and fulleſt: they bee somewhat of a high colour, and have upon them a very thicke huske, which making the meale somewhat browne causeth the Baker not all together to esteeme them for his pureſt Manchet, yet the yeeld of flower which commeth from them is as great and greater then any other Wheate whatsoever. Theſe two sorts of Wheate are to bee sowne upon the Fallow Field, as craving the greateſt strength and fatneſſe of ground, whence it comes that they are most commonly seene to grow upon the richeſt and stiffeſt blacke Clayes, being a graine of that strength that they will seldome or never mildew or turne b'ac'r, as the other sorts of Wheate will doe, if the strength of the ground be not abated before they be throwne into the earth. Now for the choice of theſe two Wheates, if you be compelled to buy them in the market, you must regard that you buy that which is the cleaneſt and faireſt, being utterly without any weeds, as Darnell, Cockle, Tares, or any

The choiſe of Seede Wheate.

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any other foulenesse whatsoever: you shall looke that the Wheat, as neere as may bee, hold all of one bignesse, and all of one colour, for to behold it contrary, that is to say, to see some great Cornes, some little, some high coloured, some pale, so that in their mixture they resemble changeable Taffata, is an apparant signe that the Corne is not of one kinde but mixt or blended as being partly whole straw, partly Pollard, partly Organe, and partly Chelter. For the flaxen, it is naturally so white, that it cannot bee mixt but it may easily bee discerned; and these mixt seedes are never good, either for the ground or the use of man. Againe, you shall carefully looke, that neither this kinde of Wheat, nor any other that you buy for seed bee blacke at the ends, for that is a signe that the Graine comming from too rich a soyle was mildewed, and then it will never bee fruitfull or proove good seed; as also you shall take care that it be not too white at the ends, shewing the Corne to bee as it were of two colours, for that is a signe that the Wheate was washt and dryed againe, which utterly confoundeth the strength of the Corne, and takes from it all abilitie of bringing foorth any great encrease. Now if it bee so that you have a crop of Wheat of your owne, so that you have no need of the Market, you shall then picke out of your choysest sheafes, and upon a cleane floore gently batt them with a flaile, and not thresh them cleane, for that Corne which is greatest, fullest, and ripest, will first flye out of the eare, and when you have so batted a competent quantity, you shall then winnow it and dresse it cleane, both by the helpe of a strong wind and open sives, and so make it fit for your seed.

I have seene some Husbands, (and truely I have accounted them both good and carefull) that have before Wheate-seed-time both themselves, wives, children, and servants at times of best leasure, out of a great Wheate-mow or Bay, to gleane or pull out of the sheafes, eare by eare, the most principall eares, and knitting them up in small bundles, to batt them and make their seed thereof,

and

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and queſtionleſſe it is the beſt ſeede of all other: for you ſhall bee ſure that therein can bee nothing but the cleaneſt and the beſt of the Corne, without any weedes or foulneſſe, which can hardly bee when a man threſheth the whole ſheafe; and although ſome men may thinke that this labour is great and troubleſome, eſpecially ſuch as ſow great quantities of Wheate, yet let them thus farre encourage themſelves, that if they doe the firſt yeere but gleane a buſhell or two (which is nothing amongſt a few perſons) and ſow it upon good Land, the increaſe of it will the next yeere goe farre in the ſowing the whole crop: for when I doe ſpeake of this picking of wheate, eare by eare, I doe not intend the picking of many quarters, but of ſo much as the increaſe thereof may amount to ſome quarter.

Now there is alſo another regard to bee had (as available as any of the former) in chooſing of your ſeede Wheate, and that is to reſpect the ſoyle from whence you take your ſeede, and the ſoyle into which you put it, as thus.

If the ground whereon you meane to ſow your Wheate be a rich, blacke clay, ſtiffe and full of fertilitie, you ſhall then (as neere as you can) chooſe your ſeede from the barraineſt mixt earth you can finde (ſo the Wheate bee whole-ſtraw or Pollard) as from a clay and gravell, or a clay and white ſand, that your ſeede comming from a much more barraine earth then that wherein you put it, the ſtrength may be as it were redoubled, and the increaſe conſequently amount to a higher quantity, as wee finde it proveth in our daily experience; but if theſe barraine ſoyles doe not affoord you ſeede to your contentment, it ſhall not then be amiſſe (you ſowing your Wheate upon fallow or tilth-ground) if you take your Seede-wheate either from an earth of like nature to your owne, or from any mixt earth, ſo that ſuch ſeede come from the Niams, that is, that it hath beene ſowne after Peaſe, as being the third crop of the Land, and not from the fallow or tilth

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ground, for it is a maxime amongst the best Husbands (though somewhat prepostorous to common sense) bring to your rich ground seede from the barraine, and to the barraine seede from the rich, their reason (taken from their experience) being this, that the seede (as before I said) which prospereth upon a leane ground being put into a rich, doth out of that superfluitie of warmth, strength and fatnesse, double his increase; and the seede which commeth from the fat ground being put into the leane, having all the vigour, fullnesse and juyce of fertilenesse, doth not only defend it selfe against the hungrinesse of the ground, but brings foorth increase contrary to expectation; whence proceedeth this generall custome of good Husbands in this Land, that those which dwell in the barraine wood Lands, Heathes and high Mountaine countries of this kingdome, ever (as neere as they can) seeke out their seede in the fruitfull low vales, and very gardens of the earth, and so likewise those in the vales take some helpes also from the Mountaines.

Now for your other sorts of Wheate, that is to say, the white Pollard and the Organe, they are graines nothing so great, full and large, as the whole straw, or browne Pollard, but small, bright; and very thinly huskt: your Organe is very red, your Pollard somewhat pale: these two sorts of Wheate are best to bee sowne upon the third or fourth field, that is to say, after your Pease, for they can by no meanes endure an over rich ground, as being tender and apt to sprout with small moisture, but to mildew and choake with too much fatnesse, the soyles most apt for them, are mixt earthes, especially the blacke clay and red sand, or white clay and red sand, for as touching other mixtures of grounds, they are for the most part so barraine, that they will but hardly bring foorth Wheat upon their fallow field, and then much worse upon a fourth field. Now for any other particular choice of these two seedes, they are the same which I shewed in the whole straw, and great Pollard. As for the flaxen Wheate,

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Wheate, and chilter Wheate, the first, is a very white Wheate both inward and outward, the other a pale red or deepe yellow: they are the least of all sorts of Wheate, yet of much more hardnesse and toughnesse in sprouting, then either the Organe or white Pollard, and therefore desire somewhat a more richer soyle, and to that end they are for the most part sowne upon fallow fieldes, in mixt earths, of what natures or barrainnesse soever, as is to be seene most generally over all the South parts of this Realme: and although uncompounded sands out of their owne nature doe hardly bring forth any Wheate, yet upon some of the best sands, and upon the flintie gravels, I have seene these two Wheates grow in good abundance, but being seldome, it is not so much to be respected.

After your Wheate, you shall make choice of your Rye, of which there are not divers kinds, although it carry divers complections, as some blackish, browne, great, full and long, as that which for the most part growes upon the red sand, or red clay, which is three parts red sand mixt with blacke clay, and is the best Rye: the other a pale gray Rye, short, small, and hungry, as that which growes upon the white sand, or white clay and white sand, and is the worst Rye. Now you shall understand that your sand grounds are your onely naturall grounds for Rye, as being indeede not principally apt for any other graine, therefore when you chuse your Rye for seede, you shall chuse that which is browneſt, full, bould, and longest, you shall have great care that it bee free from weedes or filth, sith your sand grounds, out of their owne naturall heat, doe put forth such store of naughtie weedes, that except a man be extraordinarily carefull, both in the choice and dressing of his Rye, he may easily be deceived and poyson his ground with those weedes, which with great difficultie are after rooted out againe. Now for your seedes to each soyle, it is ever best to sow your best sand Rye upon your best clay ground, and your best clay Rye upon your best sand ground, obser- The choice of seede Rye.

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ving ever this generall principle, not onely in Rye, but even in Wheate, Barley, Peaſe, and other graine of account, that is, ever once in three yeeres, to change all your ſeede, which you ſhall finde both to augment your increaſe and to returne you double profit.

The choice of Seede-barley.

Now for the choice of your Seede-barley, you ſhall underſtand, that foraſmuch as it is a graine of the greateſt uſe, and moſt tenderneſſe, therefore there is the greateſt diligence to bee uſed in the election thereof. Know then that of Barley there be divers ſorts, as namely, that which wee call our common Barley, being long eares with two rankes of Corne, narrow, cloſe, and upright: another called ſpike, or Battledore-barley, being a large eare with two rankes of Corne, broad, flat, and in faſhion of a Battledore: and the third called Beane-barley, or Barley-big, being a large foure-ſquare eare, like unto an eare of Wheate.

Of theſe three Barleyes, the firſt is moſt in uſe, as being moſt apt and proper to every ſoyle, whether it bee fruitfull or barraine, in this our kingdome, but they have all one ſhape, colour and forme, except the ſoyle alter them, onely the Spike-barley is moſt large and plentifull, the common Barley hardeſt and apteſt to grow, and the Beane-barley leaſt, paleſt, and tendereſt; ſo that with us it is more commonly ſeene in gardens then in fields, although in other Countries, as in *France*, *Ireland*, and ſuch like, they ſow no other Barley at all, but with us it is of no ſuch generall eſtimation, and therefore I will neither give it precedencie, nor ſpeake of it, otherwiſe then to referre it to the diſcretion of him who takes delight in many practiſes: but for the common Barley, or Spike-barley, which our experience findes to be excellent and of great uſe, I will knit them in one, and write my full opinion of them, for their choice in our ſeede. You ſhall know then that when you goe into the market to chooſe Barley for your ſeede, you ſhall to your beſt power elect that which is whiteſt, fulleſt, and roundeſt, being as the Plough-man calles it, a full bunting Corne, like the nebbe or beake of a Bunting, you

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you shall observe that it be all of one Corne, and not mingled, that is, clay Barley, and sand Barley together, which you shall distinguish by these differences: the clay Barley is of a palish, white, yellow colour, smooth, full, large and round, and the sand Barley is of a deepe yellow, browne at the neather end, long, slender, and as it were, withered, and in generall no sand Barley is principall good for seed: but if the Barley bee somewhat of a high colour, and browne at the neather ende, yet notwithstanding is very full, bould, and bigge, then it is a signe that such Barley comes not from the sand, but rather from an over-fat soyle, sith the fatnesse of the earth doth ever alter the complection of the Barley; for the whiter Barley ever the leaner soyle, and better seed: You shall also observe, that there bee not in it any light Corne, which is a kinde of hungry graine without substance, which although it filleth the seeds-mans hand, yet it deceiveth the ground, and this light Corne will commonly be amongst the best Barley: for where the ground is so rich that it bringeth foorth the Barley too rankely, there the Corne, wanting power to stand upon root, falleth to the ground, and so robd of kindly ripening, bringeth foorth much light and insufficient graine. Next this, you shall take care, that in your seed-Barley there bee not any Oates; for although they bee in this case amongst Husbandmen accounted the best of weed, yet are they such a disgrace, that every good Husband will most diligently eschew them, and for that cause onely will our most industrious Husbands bestowe the tedious labour of gleaning their Barley, eare by eare, by which gleanings, in a yeere, or two, they will compasse their whole seed, which must infallibly be without either Oates or any weed whatsoever: and although some grounds, especially your richest blacke clayes, will out of the abundance of their fruitfulnesse (as not induring to bee idle) bring foorth naturally a certaine kinde of wilde Oates, which makes some ignorant Husbandes lesse carefull of their Seed, as supposing that those wilde ones are a poysoning,

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to their Graine, but they are infinitely deceived: for such wilde Oates, whereſoever they bee, doe ſhake and fall away long before the Barley bee ready, ſo that the Husbandman doth carry of them nothing into the Barne, but the ſtraw onely. Next Oates, you muſt bee carefull that there be in your Barley no other foule weed: for whatſoever you ſow, you muſt looke for the increaſe of the like nature, and therefore as before I ſaid in the Wheat, ſo in the Barley, I would wiſh every good Husband to imploy ſome time in gleaning out of his Mow the principall eares of Barley, which being batted, dreſt, and ſowne by it ſelfe, albeit no great quantitie at the firſt, yet in time it may extend to make his whole ſeed perfect, and then he ſhall find his profit both in the Market, where hee ſhall (for every uſe) ſell with the deareſt, and in his owne houſe, where he ſhall find his yeeld redoubled.

Now for fitting of ſeverall Seedes to ſeverall ſoyles, you ſhall obſerve, that the beſt ſeed-Barley for your Clay-field, is Ninam Barley, ſowen upon the Clay field, that is to ſay, Barley which is ſowne where Barley laſt grew, or a ſecond crop of Barley: for the ground having his pride abated in the firſt Crop, the ſecond, though it bee nothing neere ſo much in quantitie, yet that Corne which it doth bring forth, is moſt pure, moſt white, moſt full, and the beſt of all Seeds whatſoever, and as in caſe of this Soyle, ſo in all other like ſoyles, which doe holde that ſtrength or fruitfulneſſe in them, that they are either able of themſelves, or with ſome helpe of Manure in the latter end of the yeere, to bring forth two Crops of Barley, one after the other: but if either your ſoyle deny you this ſtrength, or the diſtance of place bereave you of the commoditie therof, then you ſhall underſtand, that Barley from an haſell ground is the beſt ſeed, for the clay ground, and Barley from the clay ground is the beſt ſeed, not onely for the haſell earth, but even for all mixt earths whatſoever, and the Barley which proceeds from the mixt earths, is the beſt ſeed for all ſimple and uncompounded ſands or gravells,

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as wee finde, both by their increasings, and daily experience.

Now for the choise of seed-Beanes, Pease, or other Pulse, the scruple is nothing neere so great as of other seeds, because every one that knowes any graine, can distinguish them when hee sees them: besides they are of that massie weight, and so well able to indure the strength of the wind, that they are easie to bee severed from any weed or filth whatsoever: it resteth therefore that I only give you instruction how to imploy them.

The choise of seed-Beanes, Pease, and Pulse.

You shall understand therefore, that if your soyle bee a stiffe, blacke, rich Clay, that then your best seed is cleane Beanes, or at the least three parts Beanes, and but one part Pease: if it be a gray, or white clay, then Beanes and Pease equally mixt together: if the best mixt earths, as a black clay and red sand, blacke clay and white sand, or white clay and red sand, then your seed must be cleane Pease onely: if it be white clay and white sand, blacke clay and black sand, then your seed must be Pease and Fitches mixt together: but if it bee gravell or sand simple, or gravell and sand compounded, then your seed must bee either cleane Fitches, cleane Bucke, or cleane Tares, or else Fitches, Bucke and Tares mixt together.

The choise of Seed-Oates.

Now to conclude with the choise of your Oates; You shall understand that there be divers kindes of them, as namely, the great long white Oate, the great long blacke Oate, the cut Oate, and the Skegge: the two first of these are knowne by their greatnesse and colours, for they are long, full, bigge, and smooth, and are fittest to be sowne upon the best of barraine grounds, for sith Oates are the worst of Graine, I will give them no other prioritie of place. The next of these, which is the cut Oate, it is of a pale yellow colour, short, smooth, and thicke, the increase of them is very great, and they are the fittest to bee sowne upon the worst of best Grounds, for most commonly where you see them, you shall also see both good Wheate, good Barley, and good Beanes and Pease also,

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alſo. Now for the skegge Oate, it is a little, ſmall, hungrie, leane Oate, with a beard at the ſmall end like a wilde Oate, and is good for ſmall uſe more then Pullen onely: It is a ſeed meet for the barrenneſt and worſt earth, as fit to grow but there where nothing of better profit will grow. And thus much for thoſe ſeedes which are apt and in uſe in our Engliſh ſoyles: wherein if any man imagine me guiltie of errour, in that I have omitted particularly to ſpeake of the ſeed of blend-Corne, or Maſline, which is Wheate and Rye mixt together: I anſwer him, that ſith I have ſhewed him how to chuſe both the beſt Wheat, and the beſt Rye, it is an eaſie matter to mixe them according to his owne diſcretion.

CHAP. XVIII.

Of the time of Harveſt, and the gathering in of Corne.

NExt unto Plowing, it is neceſſarie that I place Reaping, ſith it is the end, hope, and perfection of the labour, and both the merit and incouragement which maketh the toyle both light and portable: then to proceed unto the time of Harveſt, you ſhall underſtand, that it is requiſite for every good Husband about the latter end of Iuly, if the ſoyle wherein hee liveth be of any hott temper, or about the beginning of Auguſt, if it bee of temperate warmth, with all diligence conſtantly to behold his Rye, which of all Graines is the firſt that ripeneth, and if he ſhall perceive that the hull of the eare beginneth to open, and that the blacke toppes of the Corne doe appeare, hee may then be aſſured, that the Corne is fully tipe, and ready for the Sickle, ſo that inſtantly hee ſhall provide his Reapers, according to the quantitie of his Graine: for if he ſhall neglect his Rye but one day more then is fit, it is ſuch a haſtie graine, that it will ſhale

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ſhale forth of the huske to the ground, to the great loſſe of the Husbandman. When he hath provided his ſhearers, which he ſhall be carefull to have very good, he ſhall then looke that neither out of their wantonneſſe nor emulation, they ſtrive which ſhall goe faſteſt, or rid moſt ground, for from thence proceede many errours in their worke, as namely, ſcattering, and leaving the Corne uncut behind them, the cutting the heads of the Corne off, ſo that they are not poſſible to bee gathered, and many ſuch like incommodities, but let them goe ſoberly and conſtantly, and ſheare the Rye at leaſt fourteene inches above the ground. Then he muſt looke that the gatherers which follow the Reapers, doe alſo gather cleane, and the binders bind the Sheaves faſt from breaking, then if you finde that the bottome of the Sheaves be full of greenes, or weedes, it ſhall not be amiſſe to let the Sheaves lye one from another for a day, that thoſe greenes may wither, but if you feare any Raine or foule weather, which is the onely thing which maketh Rye ſhale, then you ſhall ſet it up in Shockes, each Shocke containing at leaſt ſeaven Sheaves, in this manner: Firſt, you ſhall place foure Sheaves upright cloſe together, and the eares upwards, then you ſhall take other three Sheaves and opening them and turning the eares downeward, cover the other foure Sheaves that ſtood upwards, and ſo let them ſtand, untill you may with good conveniencie leade them home, which would be done without any protraction. Next after your cleane Rye, you ſhall in the ſelfe-ſame ſort reape your Blend-corne, or Maſline: and albeit, your Wheate will not bee fully ſo ripe as your Rye, yet you ſhall not ſtay your labour, being well aſſured that your Rye is ready, becauſe Wheate will harden of it ſelfe after it is ſhorne, with lying onely. After you have got in your Rye and Blend-corne, you ſhall then looke unto your cleane Wheate, and taking heere and there an eare thereof, rubbe them in your hand, and if you finde that the Corne hath all perfection ſave a little hardning onely, you ſhall

The getting in of Maſlin.

The getting in of Wheate.

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then forthwith set your Reapers unto it, who shall sheare it in all things as they did sheare your Rye, onely they shall not put it in Shockes for a day or more, but let the Sheaves lye single, that the winde and Sunne may both wither the greenes, and harden the Corne: which done, you shall put the Sheaves into great Shockes, that is to say, at least twelve or fourteene Sheaves in a Shocke, the one halfe standing close together with the eares upward, the other halfe lying crosse overthwart those eares, and their eares downeward, and in this sort you shall let your Wheate stand for at least two dayes before you leade it.

Mowing wheat.

Now it is a custome in many Countries of this kingdome not to sheare their Wheate but to mow it, but in my conceit and in generall experience, it is not so good: for it both maketh the Wheate foule, and full of weede, and filleth up a great place with little commoditie; as for the use of thacking, which is the onely reason of such disorderly cutting, there is neither the straw that is shorne, nor the stubble which is left behinde, but are both of sufficiencie enough for such an imployment, if it passe through the hands of a workman, as wee see in daily experience.

The getting in of Barley.

Next to your Wheate, you shall have regard to your Barley, for it sodainely ripeneth, and must be cut downe assoone as you perceive the straw is turned white, to the bottome, and the eares bended downe to the groundward. Your Barley you shall not sheare, although it is a fashion in some Countries, both because it is painefull and profitlesse, but you shall mow it close to the ground; and although in generall it be the custome of our kingdome, after your Barley is mowen, and hath lyen a day or two in swathe, then with rakes to rake it together, and make it into great cocks, and so to leade it to the Barne, yet I am of this opinion, that if your Barley be good and cleane without thistles or weedes, that if then to every sitheman, or mower you alot two followers, that is to say, a gatherer

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therer, who with a little short rake and a small hooke, shall gather the Corne together, and a binder, who shall make bands, and binde up the Barley in small Sheaves, that questionlesse you shall finde much more profit thereby: and although some thinke the labour troublesome and great, yet for mine owne part, I have seene very great crops inned in this manner, and have seene two women, that with great ease, have followed and bound after a most principall mower, which made me understand that the toyle was not so great as mine imagination; and the profit ten-fold greater then the labour: but if your Corne be ill Husbanded, and full of Thistles, Weedes, and all filthinesse, then this practice is to be spared, and the loose cocking up of your Corne is much better. Assoone as you have cleansed any Land of Barley, you shall then immediately cause one with a great long rake, of at least thirtie teeth, being in a sling bound beamicke-wise crosse his body, to draw it from one end of the Land to the other, all over the Land, that hee may thereby gather up all the loose Corne which is scattered, and carry it where your other Corne standeth, observing ever, as your chiefest rule, that by no meanes you neither leade Barley, nor any other graine whatsoever, when it is wet, no although it bee but moystned with the dew onely: for the least dankishnesse, more then the sweate which it naturally taketh, will soone cause it to putrifie.

Now for the gathering in of your Oates, they be a graine of such incertainty, ripening ever according to the weather, and not after any setled or natural course, that you are to look to no constant season, but to take them upon the first show of ripenesse, and that with such diligence that you must rather take them before, then after they be ripe, because if they tarry but halfe a day too long, they will shed upon the ground, and you shall lose your whole profit. The time then fittest to cut your Oates is, assoone as they be somewhat more then halfe changed, but not altogether changed, that is, when they are more then two parts white, and yet the greene not ut- The getting in of Oates.

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terly extinguished, the best cutting of them is to mow them (albeit I have seene them shorne in some places) and being mowen to let them dry and ripen in the swathe, as naturally they will doe; and then if you bind them up in Sheaves, as you should binde your Barley, it is best: for to carry them in the loose cocke, as many doe, is great losse and hindrance of profit.

The getting in of Pulse.

After you have got in your white Corne, you shall then looke unto your pulse, as Beanes, Pease, Fitches, and such like, which you shall know to be ready by the blackenesse of the straw: for it is a rule, whensoever the straw turnes, the Pulse is ripe. If then it bee cleane Beanes, or Beanes and Pease mixt, you shall mowe them, and being cleane Beanes, rake them into heapes, and so make them up into cockes, but if they be mixt, you shall with hookes fould the Beanes into the Pease, and make little round reapes thereof, which after they have beene turned and dryed, you may put twentie reapes together, and thereof make a cocke, and so leade them, and stacke them: but if they bee cleane Pease, or Pease and Fitches, then you shall not mow them, but with long hookes cut them from the ground, which is called Reaping, and so foulding them together into small reapes, as you did your Pease and Beanes, let them be turned and dryed, and so cocked, and carried either to the Barne, stacke, or hovell.

Now having thus brought in, and finished your Harvest, you shall then immediatly mow up the stubble, both of your Wheat, Rye, and Maslin, and with all expedition there-with thacke, and cover from raine and weather, all such graine as for want of house-roome, you are compeld to lay abroad, either in stacke, or upon hovell: but if no such necessitie be, and that you have not other more necessary imployment for your stubble, it shall bee no part of ill Husbandry to let the stubble rot upon the Land, which will be a reasonable Manuring or fatting of the earth.

Now having brought your Corne into the Barne, it is a lesson needlesse to give any certaine rules how to spend

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or utter it forth, ſith every man muſt be ruled according to his affaires, and neceſſitie, yet ſith in mine owne experience I have taken certaine ſetled rules from thoſe who have made themſelves great eſtates by a moſt formall and ſtrickt courſe in their Husbandry, I thinke it not amiſſe to ſhow you what I have noted from them, touching the utterance and expence of their Graine: firſt, for your expence in your houſe, it is meet that you have ever ſo much of every ſeverall ſort of Graine threſht, as ſhall from time to time maintaine your family: then for that which you intend ſhall returne to particular profit, you ſhall from a fornight before *Michaelmas*, till a fortnight after, threſh up all ſuch Wheate, Rye, and Maſline, as you intend to ſell for ſeed, which muſt be winnowed, ſand, and dreſt ſo cleane as is poſſible, for at that time it will give the greateſt price; but as ſoone as Seede-time is paſt, you ſhall then threſh no more of thoſe graines till it be neere Midſommer, but begin to threſh up all ſuch Barley as you intend to convert and make into Malt, and ſo from *Michaelmas* till *Candlemas*, apply nothing but Malting, for in that time graine is ever the cheepeſt, becauſe every Barne being full, ſome muſt ſell for the paiment of Rents, ſome muſt ſell to pay Servants wages, and ſome for their Chriſtmas Proviſions: in which time Corne abating and growing ſcarce, the price of neceſſitie muſt afterwards riſe: at Candlemas you ſhall begin to threſh all thoſe Peaſe which you intend to ſell for ſeede, becauſe the time being then, and every man, out of neceſſitie, inforced to make his proviſion, it cannot be but they muſt needes paſſe at a good price and reckoning.

After Peaſe ſeede-time, you ſhall then threſh up all that Barly which you meane to ſell for ſeede, which ever is at the deareſt reckoning of any graine whatſoever, eſpecially if it be principally good and cleane. After your ſeede-Barly is ſould, you may then threſh up all ſuch Wheate, Rye, and Maſlin, as you intend to ſell: for it ever giveth the greateſt price from the latter end of May untill the

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beginning of September. In September you shall begin to sell your Maulr, which being old, and having lyen ripening the most part of the yeare, must now at the latter end of the yeare, when all old store is spent, and the new cannot bee come to any perfection, bee most deare, and of the greatest estimation: and thus being a man of substance in the world, and able to put every thing to the best use, you may by these usuall observations, and the helpe of a better judgement, imploy the fruits of your labours to the best profit, and sell every thing at the highest price, except you take upon you to give day, and sell upon trust, which if you doe, you may then sell at what unconscionable reckoning you will; which because such unnaturall exactions neither agree with charitie, nor humanitie, I will forbeare to give rules for the same, and referre every man that is desirous of such knowledge, to the examples of the World, wherein he shall finde Presidents inough for such evill customes.

And thus much for the first Part of this Worke, which containeth the manner of Plowing and Tillage onely.

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THE SECOND PART of the First Booke of the *English Husbandman*,

Containing the Art of Planting, Grafting, and Gardening, either for pleasure or profit; together with the use and ordering of the Vine, the Hop-garden, and the preservation of all kind of Fruit.

CHAP. I.

Of the Site, Modell, Squares, and Fashion of a perfect Orchard.

Although many Authors which I have read, both in *Italian*, *French*, and *Dutch*, doe make a diversitie and distinguishment of Orchards, as namely, one for profit which they fashion rudely and without forme, the other for delight, which they make comely, decent, and with all good proportion, dividing the quarters into squares, making the Alleyes of a constant breadth, and planting the fruite trees in artificiall rowes: yet forasmuch as the comlinesse and well contriving of the ground doth nothing abate, but rather increase the commoditie, I will therefore joyne them both together, and make them onely but one Orchard. Now for the Site and ground of this Orchard

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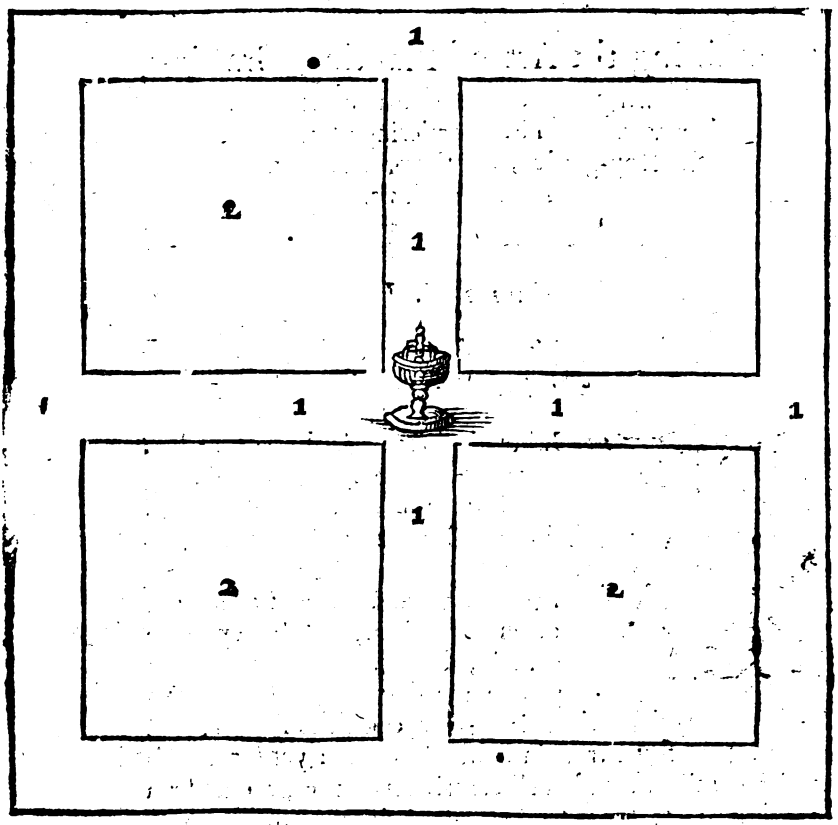
Orchard, I have in the Modell of my Countrey house, or Husbandmans Farme, shewed you where, if it be possible, it should stand, and both what Sunne and ayre it should lye open upon: but if the site or ground-plot of your house wil not give you leave to place your Orchard according to your wish, you shall then be content to make a vertue of necessitie, and plant it in such a place as is most convenient, and neerest alyed to that forme before prescribed.



Now when you have found out a perfect ground plot, you shall then cast it into a great large square, which you shal fence

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fence in either with a ſtone or bricke wall, a high, ſtrong pale, or great ditch with a quicke-ſet hedge, but the wall is beſt and moſt durable, and that wall would have upon the inſide within twelve or fourteene foot one of another, Iames or outſhoots of ſtone or bricke, betwene which you may plant and plaſh thoſe fruit-trees which are of greateſt tenderneſſe, the South and Weſt Sunne having power to ſhine upon them. Iambs.

When you have thus fenc'd in this great ſquare, you ſhall then caſt foure large alleyes, at leaſt fourteene foote broad, from the wall round about, and ſo likewiſe two other alleyes of like breadth, directly croſſe overthwart the ground-plot, which will divide the great ſquare into foure leſſer ſquares, according to the figure before ſet downe.

The figure 1. ſheweth the alleyes which both compaſſe about, and alſo croſſe over the ground-plot, and the figure 2. ſheweth the foure quarters where the fruit-trees are to be planted.

Now if either the true nature and largeneſſe of the ground be ſufficient, or your owne abilitie of purſſe ſo great that you may compaſſe your deſires in theſe earthly pleaſures, it ſhall not be amiſſe, but a matter of great ſtate, to make your ground-plot full as bigge againe, that is to ſay, to containe eight large quarters, the firſt foure being made of an even levell, the other foure being raiſed at leaſt eight foote higher then the firſt, with convenient ſtaires of ſtate for aſcending to the ſame, to bee likewiſe upon another even levell of like forme, and if in the center of the alleyes, being the mid-point betweene the ſquares, might bee placed any quaint fountaines or any other antique ſtandard, the platforme would be more excellent, and if upon the aſcent from one levell to another there might be built ſome curious and artificiall banquetting houſe, it would give luſter to the Orchard.

Now for the planting and furniſhing of theſe quarters: you ſhall underſtand, that if your Orchard containe but foure quarters, then the firſt ſhalbe planted with Apple-

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trees of all sorts, the second with Peares and Wardens of all sorts, the third with Quinces and Chesnuts, the fourth with Medlars and Services. Against the North side of your Orchard wall against which the South sunne reflects, you shall plant the Abricot, Verdochio, Peach, and Damaske-plumbe: against the East-side of the wall, the white Muskadine Grape, the Pescod-plumbe, and the Emperiall-plumbe: against the West-side the grafted Cherries, and the Olive-tree: and against the South-side the Almond, and Figge tree. Round about the skirts of every other outward or inward alley, you shall plant, the Wheate-Plumbe, both yellow and redde, the Rye-plumbe, the Damson, the Horse-clog, Bulleyes of all kindes, ordinary French Cherries, Filberts, and Nuts of all sorts, together with the Prune-plumbe, and other such like stone fruits. But if your Orchard be of state and prospect, so that it containe eight quarters or more (according to the limitation of the earth) then you shall in every severall quarter plant a severall fruit, as Apple-trees in one quarter, Peares in another, Quinces in another, Wardens in another, and so forth of the rest. Also you shall observe in planting your Apples, Peares and Plumbes, that you plant your Summer or early fruit by themselves, and the Winter or long lasting fruit by themselves. Of Apples, your Ienitings, Wibourns, Pomederoys, and Queene-Apples are reckoned the best early fruits, although there be divers others, and the Pippin, Peare-maine, Apple-Iohn, and Russetting, your best Winter and long lasting fruit, though there be a world of other: for the tastes of Apples are infinite, according to their composition and mixture in grafting. Of Peares, your Golden Peare, your Katherine-Peare, your Lording, and such like, are the first, and your stone-Peare, Warden-Peare, and Choake-Peare, those which endure longest. And of Plumbes, the Rye-plumbe is first, your Wheate-plumbe is next, and all the other sorts of Plumbes ripen almost together in one season, if they have equall warmth, and be all of like comfortable standing.

Now

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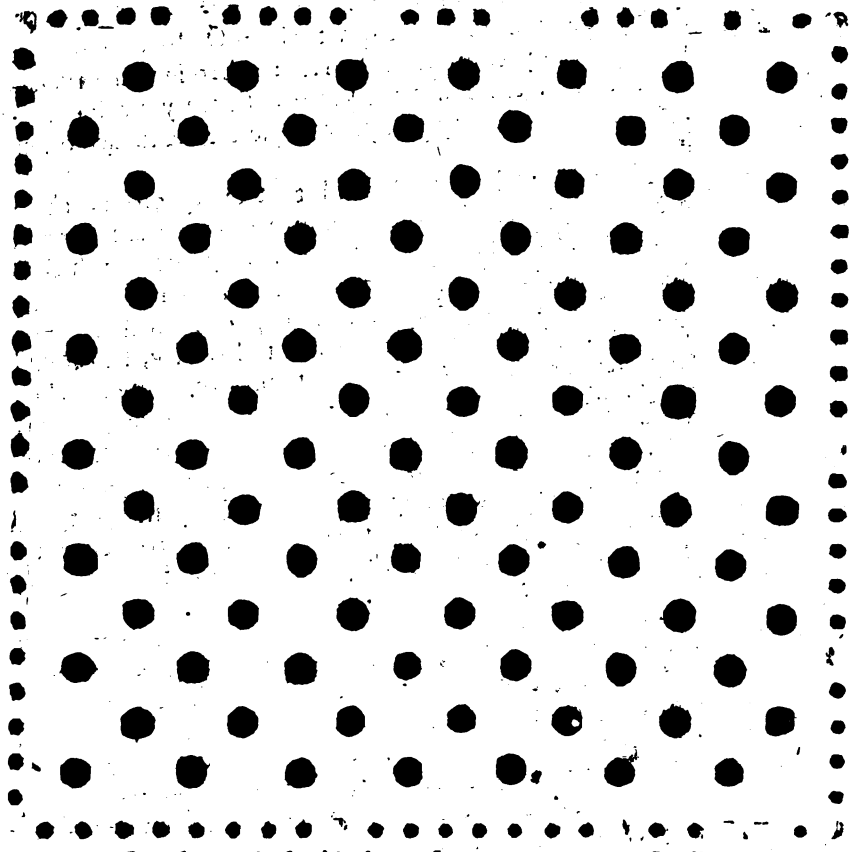

Now for the orderly placing of your trees, you ſhall underſtand that your Plumbe-trees (which are as it were a fence or guard about your great quarters) would bee placed in rowes one by one, above five foote diſtance one from another, round about each skirt of every alley: your Apple-trees and other greater fruit which are to be planted in the quarters, would bee placed in ſuch artificiall rowes that which way ſoever a man ſhall caſt his eyes, yet hee ſhall ſee the trees every way ſtand in rowes, making ſquares, alleyes, and diviſions, according to a mans ima-

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gination, according to the figure before, which I would have you suppose to be one quarter in an Orchard, and by it you may easily compound the rest: wherein you shall understand that the lesser prickes doe figure your Plumbe-trees, and the greater pricks your Apple-trees, and such other large fruit.

Now you shall understand that every one of these great trees which furnish the maine quarter shall stand in a direct line, just twelve foote one from another, which is a space altogether sufficient enough for their spreading, without waterdropping or annoying one another; provided that the Fruiterer, according to his duty, be carefull to preserve the trees upright, and to underprop them when by the violence of the winde they shall swerve any way. Vpon the ascent or rising from one levell to another, you may plant the Barberry-trees, Feberries, and Raspberries, of all sorts, which being spreading, thorny, and sharpe trees, take great delight to grow thicke and close together, by which meanes often times they make a kind of wall, hedge, or fencing, where they stand.

Having thus shewed you the ground-plot and proportion of your Orchard, with the severall divisions, ascents, and squares, that should be contained therin, and the fruits which are to furnish every such square and division, and their orderly placing, it now rests that you understand that this Orchard-plot, so neere as you can bring it to passe, doe stand most open and plaine upon the South and West Sunne, and most defended from the East and North windes and bitternesse, which being observed your plot is then perfect and absolute.

Now forasmuch as where nature, fruitfulnesse, and situation doe take from a man more then the halfe part of his industrie, and by a direct and easie way doth lead him to that perfection which others cannot attaine to without infinite labour and travell: and whereas it is nothing so commendable to maintaine beautie, as to make deformitie beautifull, I will speake something of the framing

of

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of Orchard-plots there where both nature, the situation, and barainneſſe, doe utterly deny the enjoying of any ſuch commoditie, as where the ground is uneven, ſtonie, ſandy, or in his lowneſſe ſubject to the overflow of waters, all being apparant enemies to theſe places of pleaſure and delight. Firſt, for the unevenneſſe of the ground, if that be his uttermoſt imperfection, you ſhall firſt not onely take a note with your eye, but alſo place a marke upon the beſt aſcent of the ground to which the levell is fitteſt to bee drawne, and then plowing the ground all over with a great common Plough, by caſting the furrowes downward, ſeeke to fill in and cover the leſſer hollowneſſes of the ground, that there may not any thing appeare but the maine great hollowes, which with other earth which is free from ſtones, gravell, or ſuch like evils, you ſhall fill up and make levell with that part where your marke ſtandeth, and being ſo levelled, forth with draw the plot of your Orchard: but if the ground be not onely uneven, but alſo barraine, you ſhall then to every loade of earth you carry to the levelling, adde a loade of Manure, either Oxe Manure, or Horſe Manure, the rubbiſh of houſes, or the cleanſings of olde ditches, or ſtanding pooles, and the earth will ſoone become fertile and perfect; but if the ground be ſtonie, that is, full of great ſtones, as it is in *Darbiſhire* about the Peake or Eaſt Mores, for ſmall pibbles, or ſmall lime-ſtones are not very much hurtfull, then you ſhall cauſe ſuch ſtones to be digd up, and fill up the places where they lay either with Marle, or other rich earth, which after it hath beene ſetled for a yeere or two, you ſhall then Plow and levell it, and ſo frame forth the plot of your Orchard. If the ground bee onely a barraine ſand, ſo that it wanteth ſtrength either to maintaine or bring foorth, you ſhall then firſt digge that earth into great trenches, at leaſt foure foot deepe, and filling them up with Oxe Manure, mixe it with the ſand that it may change ſome part of the colour thereof, and then levelling it faſhion out your Orchard. But laſtly, and which is of all ſitua-

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tions the worſt, if you have no ground to plant your Orchard upon, but ſuch as either through the neighborhood of Rivers, deſcent of Mountaines, or the earths owne naturall qualitie in caſting and vomiting out water and moyſture, is ſubject to ſome ſmall overflowes of water, by which you cannot attaine to the pleaſure you ſeeke, becauſe fruit-trees can never indure the corruption of waters, you ſhall then in the drieſt ſeaſon of the yeare, after you have marked out that ſquare or quantity of ground which you intend for your Orchard, you ſhall then caſt therein ſundry ditches, at leaſt ſixteen foot broad, & nine foot deepe, and not above twelve foot betwixt ditch and ditch, upon which reſerved earth caſting the earth that you digged up, you ſhall raiſe the bankes at leaſt ſeven foot high of firme earth, and keepe in the top the full breadth of twelve foot, within a foot or little more: and in the caſting up of theſe bankes, you ſhall cauſe the earth to be beaten with maules and broad beetles, that it may lye firme, faſt, and levell; and after theſe bankes have reſted a yeere or more, and are ſufficiently ſetled, you may then at the nether end of the banke, neere to the verge of the water, plant ſtore of Oſiers, which will be a good defence to the banke, and upon the top and higheſt part of the banke, you ſhall plant your Orchard and fruit-trees, ſo that when any inundation of water ſhall happen, the ditches ſhall be able enough to receive it; or elſe making a paſſage from your Orchard into ſome other ſewer, the water exceeding his limits may have a free current or paſſage: beſides, theſe ditches being neatly kept, and comforted with freſh water, may make both pleaſant and commodious fiſh ponds. Alſo you muſt be carefull in caſting theſe bankes, that you doe not place them in ſuch ſort, that when you are upon one you cannot come to the other, but rather like a maze, ſo that you may at pleaſure paſſe from the one to the other round about the ground, making of divers bankes to the eye but one banke in ſubſtance, and of divers ponds in appearance, but one in true judgement. And thus much for the plot or ſituation of an Orchard.

CHAP.

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CHAP. II.

Of the Nurserie where you shall set all manner of Kernels, and Stones for the furnishing of the Orchard.

ALthough great persons, one of their greatneſſe and abilitie, doe buy their fruit-trees ready grafted, and ſo in a moment may plant an Orchard of the greateſt quantitie, yet ſith the Husbandman muſt raiſe every thing from his owne indeavours, and that I onely write for his profit, I therefore hold it moſt convenient to begin with the Nurſerie or Store-houſe of fruits, from whence the Orchard receiveth his beauty and riches.

This Nurſerie muſt be a piece of principall ground, either through Art or Nature, ſtrongly fenced, warme, and full of good ſhelter: for in it is onely the firſt infancie and tenderneſſe of fruit-trees, becauſe there they are firſt kernels, or ſtones, after ſprigs, and laſtly trees.

Now for the manner of chooſing, ſowing and planting them in this Nurſerie, I differ ſomething from the French practice, who would chooſe the kernels from the cider preſſe, ſow them in large bedds of earth, and within a yeere after replant them in a wilde Orchard: now for mine owne part, though this courſe be not much faulty, yet I ruther chuſe this kind of practice firſt: to chuſe your kernels either of Apples, Peares or Wardens, from the beſt and moſt principalleſt fruit you can taſte, for although the kernel doe bring forth no other tree but the plaine ſtocke upon which the fruit was grafted, as thus, if the graft were put into a Crab-ſtocke, the kernel brings forth onely a Crab-tree, yet when you taſte a perfect and delicate Apple, be aſſured both the ſtocke and graft were of the beſt choice, and ſo ſuch kernels of beſt reckoning. When you have them a competent quantitie of ſuch kernels, you ſhall

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shall take certaine large pots, in the fashion of milke-boules, all full of hoales in the bottome, through which the raine and superfluous moysture may avoyde, and either in the monthes of *March* or *November* (for those are the best seasons) fill the pots three parts full, of the finest, blackest, and richest mould you can get, then lay your kernels upon the earth, about foure fingers one from another, so many as the vessell can conveniently containe, and then with a sive, sift upon them other fine moulds almost three fingers thicke, and so let them rest, filling so many pots or vessells as shall serve to receive your quantitie of kernels of all sorts. Now if any man desire to know my reason why I desire to set my kernels rather in vessells then in beds of earth, my answer is, that I have often found it in mine experience, that the kernels of Apples, Peares, Quinces, and such like, are such a tender and dainty feede, that it is great oddes, but the wormes will devour and consume them before they sprout, who naturally delight in such seedes, which these vessells onely doe prevent: but to proceede.

After your kernels are sprouted up, and growne to bee at least seven or eight inches high, you shall then within your Nurserie digge up a border about two foote and an halfe broad, more then a foote deepe, and of such convenient length as may receive all your young plants, and having made the mould fine, and rich with Manure, you shall then with your whole hand gripe as much of the earth that is about the plant as you can conveniently hold, and so take both the plant and the mould out of the vessell, and replant it in the new drest border: and you shall thus doe plant after plant, till you have set every one, and made them firme and fast in the new mould: wherein you are to observe these two principles, first, that you place them at least five foote one from another, and secondly, that such kernels as you set in your vessells in *March*, that you replant them in borders of earth in *November* following, and such as you set in *November* to replant in *March* following,

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following, and being ſo replanted, to ſuffer them to grow till they be able to beare grafts, during which time you ſhall diligently obſerve, that if any of them chance to put foorth any ſuperfluous branches or cyons, which may hinder the growth of the body of the plant, that you carefully cut them away, that thereby it may be the ſooner inabled to beare a graft: for it is ever to bee intended that whatſoever proceede from kernels are onely to bee preſerved for ſtockes to graft on, and for no other purpoſe.

Now for the ſtones of Plumbs, and other ſtone fruit, you ſhall underſtand that they be of two kindes, one ſimple and of themſelves, as the Rye-plumbe, Wheate-plumbe, Damſon, Prune-plumbe, Horſe-clogge, Cherry, and ſuch like, ſo that from the kernels of them iſſue trees of like nature and goodneſſe: the other compounded or grafted Plumbes, as the Abricot, Peſcod, Peach, Damaske, Verdochyo, Emperiall, and ſuch like, from whoſe kernels iſſue no other trees but ſuch as the ſtockes were upon which they were grafted. Now, for the manner of ſetting the firſt, which are ſimple and uncompounded, you ſhall digge up a large bed of rich and good earth a month or more before *March* or *November*, and having made the mould as fine as is poſſible, you ſhall ſlat-wiſe thruſt every ſtone, a foote one from another, more then three fingers into the mould, and then with a little ſmall rake, made for the purpoſe, rake the bed over, and cloſe up the holes, and ſo let them reſt till they be of a yeares growth, at which time you ſhall replant them into ſeverall borders, as you did your Apple-tree plants and others.

Now for the kernels of your compounded or grafted Plumbes, you ſhall both ſet them in beddes, and replant them into ſeverall borders, in the ſame manner as you did the other kernels of Plumbes, onely you ſhall for the ſpace of eight and forty houres before you ſet them, ſteepe them in new milke, foraſmuch as the ſtones of them are more hard, and with greater difficultie open and ſprout in

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the earth, then any other stone whatsoever: and thus having furnished your Nursery with all sorts of fruits and stockes, you shall when they come to full age and bigneſſe graft them in such order as shalbe hereafter declared.

CHAP. III.

Of the setting or planting of the Cyons or Branches of most sorts of Fruit-trees.

AS you are to furnish your nursery with all sorts of kernels and stones, for the breeding of stocks whereon to graft the daintiest fruits you can compasse, so shall you also plant therein the cyons and branches of the best fruit trees: which cyons and branches doe bring forth the same fruit which the trees doe from whence they are taken, and by that meanes your nursery shall ever afford you perfect trees, wherewith either to furnish your owne grounds, or to pleasure your neighbours. And herein by the way you shall understand that some trees are more fit to be set then to be sowne, as namely, the Service-tree, the Medlar, the Filbert and such like. Now for the Service-tree, hee is not at all to be grafted, but set in this wise: take of the bastard cyons such as be somewhat bigger then a mans thumbe, and cutting away the branches thereof set it in a fine loose mould, at least a foote deepe, and it will prosper exceedingly, yet the true nature of this tree is not to be removed, and therefore it is convenient that it be planted where it should ever continue: in like manner to the Service-tree, so you shall plant the bastard cyons of the Medlar-tree either in *March* or *October*, and at the wane of the Moone.

Now for the Filbert, or the large Hasel-nut, you shall take the smallest cyons or wands, such as are not above two yeeres growth, being full of short heavie twigs, and grow from the roote of the maine tree, and set them in a loose

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loose mould, a foote deepe, without pruning or cutting away any of the branches, and they will prosper to your contentment. Now for all sorts of Plumb-trees, Apple-trees, or other fruit-trees that are not grafted, if you take the young cyons which grow from the rootes, cleane from the rootes, and plant them either in the spring, or fall, in a fresh and fine mould, they will not onely prosper, but bring forth fruit of like nature and qualitie to the trees from whence they were taken.

Now for your grafted fruit, as namely, Apples, Plumbes, Cherries, Mulberries, Quinces, and such like, the cyons also, and branches of them will take roote and bring forth fruit of the same kinde that the trees did from whence they were taken: but those cyons or branches must ever bee chosen from the upper parts of the trees, betwixt the feast of *All-saints* and *Christmas*, they must be bigger then a mans finger, smooth, straight, and without twigges: you shall with a sharpe Chissell cut them from the body or armes of the tree with such care, that by no meanes you raise up the barke, and then with a little yellow waxe cover the place from whence you cut the cyon: then having digged and dunged the earth well where you intend to plant them, and made the mould easie, you shall with an Iron, as bigge as your plant, make a hoale a foote deepe or better, and then put in your cyon, and with it a few Oates, long steept in water, and so fixe it firme in the mould, and if after it beginneth to put forth, you perceive any young cyons to put forth from the roote thereof, you shall immediatly cut them off, and either cast them away or plant them in other places, for to suffer them to grow may breede much hurt to the young trees. Now whereas these cyons thus planted are for the most part small and weake, so that the smallest breath of winde doth shake and hurt their rootes, it shalbe good to pricke strong stakes by them, to which, fastning the young plant with a soft hay rope, it may the better be defended from stormes and tempests.

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Next to these fruit-trees, you shall understand that your bush-trees, as Barberryes, Gooseberryes, or Feberryes, Raspberryes, and such like, will also grow upon cyons, without rootes, being cut from their maine rootes in *November*, and so planted in a new fresh mould. And here by the way I am to give you this note or caveat, that if at any time you finde any of these cyons which you have planted not to grow and flourish according to your desire, but that you finde a certaine mislike or consumption in the plant, you shall then immediatly with a sharpe knife cut the plant off slope-wise upward, about three fingers from the ground, and so let it rest till the next spring, at which time you shall behold new cyons issue from the roote, which will be without sickneſse or imperfection; and from the vertue of this experiment, I imagine the gardners of ancient time found out the meanes to get young cyons from olde Mulberry-trees, which they doe in this manner: Frſt, you must take some of the greatest armes of the Mulberry-tree about the midst of *November*, and with a sharpe sawe to sawe them into bigge truncheons, about fifteene inches long, and then digging a trench in principall good earth, of such depth, that you may cover the truncheons, being set up on end, with Manure and fine mould, each truncheon being a foote one from another, and covered more then foure fingers above the wood, not fayling to water them whensoever need shall require, and to preserve them from weeds and filthinesse, within lesse then a yeares space you shall behold those truncheons to put forth young cyons, which as soone as they come to any growth and be twigged, then you may cut them from the stockes, and transplant them where you please, onely the truncheons you shall suffer to remaine still, and cherish them with fresh dung, and they will put forth many moe cyons, both to furnish your selfe and your friends. And thus much for the planting and setting of cyons or branches.

Of

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CHAP. IIII.

Of the ordinary and accustomed manner of Grafting all sorts of Fruit-trees.

AS soone as your Nursery is thus amply furnished of all sorts of stockes, proceeding from kernels, and of all sorts of trees proceeding from cyons, branches or undergrowings, and that through strength of yeeres they are growne to sufficient abilitie to receive grafts, which is to be intended, that they must be at the least six or eight inches in compasse, for although lesse many times both doe and may receive grafts, yet they are full of debilitie and danger, and promise no assurance to the Worke-mans labour, you shall then begin to graft your Stockes with such Fruits as from Art and Experience are meet to bee conjoyned together, as thus: you shall graft Apples upon Apples, as the Pippin upon the great Costard, the Peare-maine upon the Lenetting, and the Apple-Iohn or blacke Annet upon the Pomewater or Crab-tree: to conclude, any Apple-stocke, Crab-tree, or Wilding, is good to graft Apples upon, but the best is best worthy. So for Peares, you shall graft them upon Peare-stockes, Quinces upon Quinces or Crab-trees, and not according to the opinion of the French-man, upon White-thorne or Willow, the Medlar upon the Service-tree, and the Service upon the Medlar, also Cherries upon Cherries, and Plumbes upon Plumbes, as the greater Abricots upon the lesser Abricots, the Peach, the Figge, or the Damson-tree; and to speake generally without wasting more Paper, or making a long circumstance to slender purpose, the Damson-tree is the onely principall best stocke whereupon to graft any kinde of Plumbe or stone-fruit whatsoever. The mixing of Stocks and Grafts.

After you have both your Stockes ready, and know which The choise of Grafts.

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which grafts to joyne with which ſtockes, you ſhall then learne to cut and chuſe your Grafts in this manner: looke from what tree you deſire to take your grafts, you ſhall goe unto the very principall branches thereof, and looke up to the upper ends, and thoſe which you finde to bee fayreſt, ſmootheſt, and fulleſt of ſappe, having the little knots, buds, or eyes ſtanding cloſe and thicke together, are the beſt and moſt perfect, eſpecially if they growe upon the Eaſt ſide of the tree, whereon the Sunne firſt looketh; theſe you ſhall cut from the tree in ſuch ſort, that they may have at leaſt three fingers of the old wood joyning to the young branch, which you ſhall know both by the colour of the barke, as alſo by a little round ſeame which maketh as it were a diſtinction betwixt the ſeverall grouths. Now you ſhall ever, as neere as you can, chuſe your grafts from a young tree, and not from an old, and from the toppes of the principall branches, and not from the midſt of the tree, or any other ſuperfluous arme or cyon; now if after you have got your grafts, you have many dayes journeyes to carry them, you ſhall fould them in a few freſh mouldes, and binde them about with hay, and hay-ropes, and ſo carry them all day, and in the night bury them all over in the ground, and they will containe their goodneſſe for a long ſeaſon.

How to graft in the cleft.

Having thus prepared your Grafts, you ſhall then begin to graft, which worke you ſhall underſtand may bee done in every moneth of the yeere, except November and October, but the beſt is to beginne about Chriſtmas for all early and forward fruit, and for the other, to ſtay till March: now having all your Implements and Neceſſaries about you, fit for the Grafting, you ſhall firſt take your grafts, of what ſort ſoever they be, and having cut the neather ends of them round and ſmooth without raiſing of the barke, you ſhall then with a ſharpe knife, made in the proportion of a great pen-knife, ſlice downe each ſide of the grafts, from the ſeame or knot which parts the old wood from the new, even to the neather end, making it flat and thin

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thin, chiefely in the loweſt part, having onely a regardfull eye unto the pith of the graft, which you may by no meanes cut or touch, and when you have thus trimmed a couple of grafts, for moe I doe by no meanes allow unto one ſtocke, although ſundry other skilfull workmen in this Art allow to the leaſt ſtocke two grafts, to the indifferent great three, and to the greateſt of all foure, yet I affirme two are ſufficiently enough for any ſtocke whatſoever, and albeit they are a little the longer in covering the head, yet after they have covered it, the tree proſpereth more in one yeare, then that which containeth foure grafts ſhall doe in two, becauſe they cannot have ſap enough to maintaine them, which is the reaſon that trees for want of proſperitie, grow crooked and deformed: but to my purpoſe. When you have made your grafts ready, you ſhall then take a fine thin ſawe, whoſe teeth ſhall be filed ſharpe and even, and with it (if the ſtocke be exceeding ſmall) cut the ſtocke round off within leſſe then a foote of the ground, but if the ſtocke be as bigge as a mans arme, then you may cut it off two or three foote from the ground, and ſo conſequently the bigger it is, the higher you may cut it, and the leſſer, the neerer unto the earth: as ſoone as you have ſawne off the upper part of the ſtocke, you ſhall then take a fine ſharpe chiſſell, ſomewhat broader then the ſtocke, and ſetting it even upon the midſt of the head of the ſtocke ſomewhat wide of the pith, then with a mallet of wood you ſhall ſtrike it in and cleave the ſtocke, at leaſt foure inches deepe, then putting in a fine little wedge of Iron, which may keepe open the cleft, you ſhall take one of your grafts and looke which ſide of it you intend to place inward, and that ſide you ſhall cut much thinner then the outſide, with a moſt heedfull circumſpection that by no meanes you looſen or rayſe up the barke of the graft, chiefly on the outſide: then you ſhall take the graft, and wetting it in your mouth, place it in one ſide of the cleft of the ſtocke, and regard that the very knot or ſeame which goes about the graft, parting the olde wood from the new, doe reſt directly

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rectly upon the head of the ſtocke, and that the out-ſide of the graft doe agree directly with the out-ſide of the ſtock, joyning barke unto barke, and ſap unto ſap, ſo even, ſo ſmooth, and ſo cloſe, that no Ioyners worke may bee diſcerned to joyne more artificially: which done, upon the other ſide of the ſtocke, in the other cleft, you ſhall place your other Graft, with full as much care, diligence, and every other obſervation: when both your grafts are thus orderly and artificially placed, you ſhall then by ſetting the haft of your Chiſſell againſt the ſtocke, with all lenitie and gentleneſſe, draw forth your wedge, in ſuch ſort that you doe not diſplace or alter your grafts, and when your wedge is forth, you ſhall then looke upon your grafts, and if you perceive that the ſtocke doth pinch or ſquize them, which you may diſcerne both by the ſtraitneſſe and bending of the outmoſt barke, you ſhall then make a little wedge of ſome greene ſappy wood, and driving it into the cleft, eaſe your grafts, cutting that wedge cloſe to the ſtocke. When you have thus made both your grafts perfect, you ſhall then take the barke of either Apple-tree, Crab-tree or Willow-tree, and with that barke cover the head of the ſtocke ſo cloſe, that no wet, or other annoyance may get betwixt it and the ſtocke, then you ſhall take a convenient quantitie of clay, which indeed would be of a binding mingled earth, and tempering it well, either with moſſe or hay, lay it upon the barke, and daube all the head of the ſtock, even as low as the bottome of the grafts, more then an inch thicke, ſo firme, cloſe, and ſmooth as may be, which done, cover all that clay over with ſoft moſſe, and that moſſe with ſome ragges of woollen cloath, which being gently bound about with the inward barkes of Willow, or Oſyar, let the graft reſt to the pleaſure of the higheſt: and this is called grafting in the cleft.

Notes. Now there be certaine obſervations or caveats to bee reſpected in grafting, which I may not neglect: as firſt, in trimming and preparing your grafts for the ſtocke: if the grafts be either of Cherry, or Plumbe, you ſhall not cut

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cut them so thinne as the grafts of Apples, Quinces, or Medlars, because they have a much larger and rounder pith, which by no meanes must be toucht, but fortified and preserved, onely to the neather end you may cut them as thin as is possible, the pith onely preserved.

Secondly, you shall into your greatest stockes put your greatest grafts, and into your least, the least, that there may be an equall strength and conformitie in their conjunction.

Thirdly, if at any time you be inforced to graft upon an olde tree, that is great and large, then you shall not graft into the body of that tree, because it is impossible to keep it from putrifaction and rotting before the grafts can cover the head, but you shall choose out some of the principall armes or branches, which are much more slender, and graft them, as is before shewed, omitting not daily to cut away all cyons, armes, branches, or superfluous sprigs which shall grow under those branches which you have newly grafted: but if there be no branch, small or tender enough to graft in, then you shall cut away all the maine branches from the stocke, and covering the head with clay and mosse let it rest, and within three or foure yeares it will put forth new cyons, which will be fit to graft upon.

Fourthly, if when you either sawe off the top of your stocke, or else cleave the head, you either raise up the barke or cleave the stocke too deepe, you shall then saw the stocke againe, with a little more carefulneſſe, so much lower as your first error had committed a fault.

Fiftly, you shall from time to time look to the binding of the heads of your stocks, insomuch, that if either the clay do shrinke away, or the other coverings doe loosen, by which defects, ayre, or wet, may get into the incision, you shall presently with all speed amend and repaire it.

Lastly, if you graft in any open place where cattell doe graze, you shall not then forget as soone as you have finisht your worke, to bush or hedge in your graft, that it may be defended from any such negligent annoyance. And thus

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much for this ordinary manner of grafting, which although it bee generall and publike to moſt men that know any thing in this art, yet is it not inferiour, but the principalleſt and ſureſt of all other.

CHAP. V.

Of divers other wayes of grafting, their uſes and purpoſes.

ALthough for certainty, uſe, and commodity, the manner of grafting already preſcribed is of ſufficiencie enough to ſatiſfie any conſtant or reaſonable underſtanding, yet for novelty ſake, to which our Nation is infinitly addicted, and to ſatiſfie the curious, who thinke their judgements diſparaged if they heare any authorized traveller talke of the things which they have not practiſed. I will proceed to ſome other more quaint manners of grafting, and the rather becauſe they are not altogether unneceſſary, having both certainty in the worke, pleaſure in the uſe, and benefit in the ſerious imploying of thoſe howers which elſe might challenge the title of idleneſſe, beſides they are very well agreeing with the ſoyles and fruits of this Empire of *Great Britaine*, and the underſtandings of the people, for whoſe ſervice or benefit, I onely undergoe my travell.

You ſhall underſtand therefore, that there is another way to graft, which is called grafting betweene the barke and tree, and it is to bee put in uſe about the latter end of *February*, at ſuch time as the ſappe beginnes to enter into the tres: and the ſtockes moſt fit for this manner of grafting, are thoſe which are oldeſt and greateſt, whoſe graine being rough and uneven, either through ſhaking or twinding, it is a thing almoſt impoſſible to make it cleave in any good faſhion, ſo that in ſuch a caſe it is meete that the

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the grafter exerciſe this way of grafting betwixt the barke and the tree, the manner whereof is thus:

Firſt, you ſhall dreſſe your grafts in ſuch ſort as was before deſcribed when you grafted in the cleft, onely they ſhall not be ſo long from the knot or ſeame downeward by an inch or more, neither ſo thicke, but as thinne as may be, the pith onely preſerved, and at the neather end of all you ſhall cut away the barke on both ſides, making that end ſmaller and narrower then it is at the joynt or ſeame, then ſawing off the head of the ſtocke, you ſhall with a ſharpe knife pare the head round about, ſmooth and plaine, making the barke ſo even as may be, that the barke of your grafts and it may joyne like one body, then take a fine narrow chiſell, not exceeding ſharpe, but ſomewhat rebated, and thruſt it hard downe betwixt the barke and the tree, ſomewhat more then two inches, according to the juſt length of your graft, and then gently thruſt the graft downe into the ſame place, even cloſe unto the joynt, having great care that the joynt reſt firme and conſtant upon the head of the ſtocke, and thus you ſhall put into one ſtocke not above three grafts at the moſt, however either other mens practice, or your owne reading doe perſwade you to the contrary. After your grafts are fixt and placed, you ſhall then cover the head with barke, clay, and moſſe, as hath beene formerly ſhewed: alſo you ſhall faſten about it ſome buſhes of thorne, or ſharpe whinnes, which may defend and keepe it from the annoyance of Pye-annats, and ſuch like great birds. Grafting betweene the barke and tree.

There is another way of grafting, which is called grafting in the ſcutchion, which howſoever it is eſteemed, yet is it troubleſome, incertaine, and to ſmall purpoſe: the ſeaſon for it is in Summer, from *May* till *Auguſt*, at what time trees are fulleſt of ſappe, and fulleſt of leaves, and the manner is thus: take the higheſt and the principalleſt branches of the toppe of the tree you would have grafted, and without cutting it from the old wood, chooſe the beſt eye and budding place of the cyon, then take another ſuch Grafting in the ſcutchion.

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like eye or budde, being great and full, and first cut off the leafe hard by the budde, then hollow it with your knife the length of a quarter of an inch beneath the budde, round about the barke, close to the sap, both above and below, then slit it downe twice so much wide of the budde, and then with a small sharpe chisell aise up the scutchion, with not onely the budde in the midst, but even all the sap likewise, wherein you shall first raise that side which is next you, and then taking the scutchion betweene your fingers, raise it gently up without breaking or bruising, and in taking it off, hold it hard unto the wood, to the end, the sap of the budde may abide in the scutchion, for if it depart from the barke, and cleave to the wood, your labour is lost, this done, you shall take another like cyon, and having taken off the barke from it, place it in the others place, and in taking off this barke, you must be carefull that you cut not the wood, but the barke onely, and this done, you shall cover it all over with redde waxe, or some such glutenous matter; as for the binding of it with hempe and such trumpery, it is utterly disalowed of all good grafters: this manner of grafting may be put in practice upon all manner of cyons, from the bignesse of a mans little finger, to the bignesse of a slender arme.

Grafting with the leafe.

Not much unlike unto this, is the grafting with the Leafe, and of like worth, the art whereof is thus: any time betwixt the midst of *May*, until the midst of *September*, you shall chuse, from the top of the Sun-side of the tree, the most principall young cyon you can see, whose barke is smoothest, whose leaves are greatest, and whose sappe is fullest, then cutting it from the tree, note the principall leafe thereof, and cut away from it all the wood more then about an inch of each side of the leafe, then cutting away the undermost part of the barke with your knife, take peece meale from the barke all the wood and sappe, save onely that little part of woode and sappe which feedeth the leafe, which in any wise must be left behind, so that the graft will carry this figure:

Then

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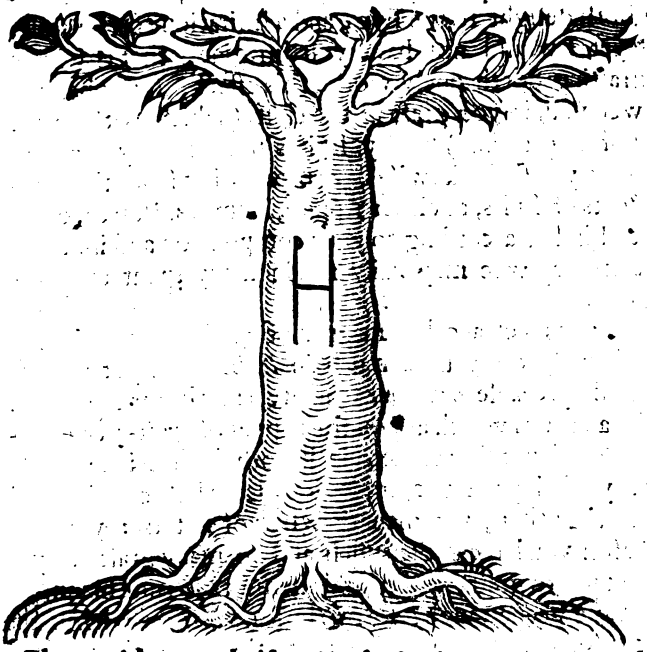
Then go to the body, arme, or branch of that tree which you intend to graft, which is to be presupposed, must ever have a smooth and tender barke, and with a very sharpe knife slit the barke, two slits at least, two inches long a peece, and about halfe an inch or more distance betweene the two slits: then make another slit crosse-wise overthwart, from long slit to long slit, the figure whereof will be thus:



Then with your knife raise the barke gently from the

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tree, without breaking, cracking, or bruising: then take your graft, and putting it under the barke, lay it flat unto the sappe of the tree, so as that little sapp which is left in the leafe, may without impediment cleave to the sappe of the tree, then lay downe the barke close againe and cover the graft, and with a little untwound Hempe, or a soft woollen list, binde downe the barke close to the graft, and then cover all the Incisions you have made with greene waxe: by this manner of grafting you may have upon one tree sundry fruits, as from one Apple-tree, both Pippins, Peare-maines, Russettings, and such like; nay, you may have upon one tree ripe fruit all Summer long, as Iennettings from one branch, Cislings from another, Wibournes from another, Costards and Queene-Apples from others, and Pippins and Russettings from others, which bringeth both delight to the Eye, and admiration to the sense: and yet I would not have you imagine, that this kinde of grafting doeth onely worke this effect, for as before I shewed you, if you graft in the cleft, (which is the safest way of all grafting) sundry fruites upon sundry armes or boughes, you shall likewise have proceeding from them sundry sorts of fruits, as either Apples, Plumbes, Peares, or any other kinde, according to your composition and industry; as at this day wee may daily see in many great mens Orchards.

Grafting on the tops of trees.

There is yet another manner of grafting, and it is of all other especially used much in *Italie*, and yet not any thing disagreeable with our Climate, and that is to graft on the small cyons which are on the toppes of fruit-trees, surely an experience that carrieth in it both difficultie and wonder, yet being put to approbation, is no lesse certaine then any of the other, the manner whereof is thus: you shall first after you have chosen such and so many grafts as you doe intend to graft, and trim'd them in the same manner as you have beene taught formerly for grafting within the cleft, you shall then mount up into the top of the tree, upon which you meane to graft, and there make choise of the highest

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higheſt and moſt principall cyons (being cleane barkt and ſound) that you can preceive to growe from the tree, then laying the graft, and the cyon upon which you are to graft, together, ſee that they be both of one bigneſſe and roundneſſe: then with your grafting knife cut the cyon off betweene the old wood and the new, and cleave it downe an inch and a halfe, or two inches at the moſt: then put in your graft (which graft muſt not bee cut thinner on one ſide, then on the other, but all of one thickeneſſe) and when it is in, ſee that the bark of the graft both above and below, that is, upon both ſides, doe ioyne cloſe, even, and firme with the barke of the branch or cyon, and then by folding a little ſoft tow about it, keepe them cloſe together, whilſt with clay, moſſe, and the in-moſt barke of Oſiars you lappe them about to defend them from ayre, winde, and tempeſts. And herein you ſhall obſerve to make your graft as ſhort as may be, for the ſhorteſt are beſt, as the graft which hath not above two or three knots or buds, and no more. You may, if you pleaſe, with this manner of grafting graft upon every ſeverall cyon, a ſeverall fruit, and ſo have from one tree many fruits, as in caſe of grafting with the leafe, and that with much more ſpeed, by as much as a well-grown graft is more forward and able, then a weake tender leafe. And in theſe ſeverall wayes already declared, conſiſteth the whole Art and ſubſtance of Grafting: from whence albeit many curious braines may, from prevaricating tricks, beget ſhowes of other faſhions, yet when true judgement ſhall looke upon their workes, he ſhall ever find ſome one of theſe Experiments the ground and ſubſtance of all their labours, without which they are able to doe nothing that ſhall turne to an aſſured commoditie.

Now when you have made your ſelfe perfect in the ſowing, ſetting, planting and grafting of trees, you ſhall then learne to know the effects, wonders, and ſtrange iſſues which doe proceed from many quaint motions and helpes in Grafting, as thus: If you will have Peaches, Cherries, Apples, Quinces, Medlars, Damſons, or any Plumbes

The effects of grafting.

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Plumbe whatsoever, to ripen early, as at the least two moneths before the ordinary time, and to continue at least a moneth longer then the accustomed course, you shall then graft them upon a Mulberry stock: and if you will have the fruit to taste like spice, with a certaine delicate perfume, you shall boile honey, the powder of Cloves and Soaxe together, and being cold annoynt the grafts therewith before you put them into the cleft; if you graft Apples, Peares, or any fruit upon a Fig-tree stocke, they will beare fruit without blooming: if you take an Apple graft, & a Peare graft of like bignesse, and having cloven them, joyne them as one bodie in grafting, the fruit they bring forth will bee halfe Apple, and halfe Peare, and so likewise of all other fruits which are of contrary tastes and natures: if you graft any fruit-tree, or other tree upon the Holly, or upon the Cypresse, they will be greene, and keepe their leaves the whole yeere, albeit the Winter be never so bitter.

If you graft either Peach, Plumbe, or any stone-fruit upon a Willow stocke, the fruit which commeth of them will be without stones.

If you will change the colour of any fruit, you shall boare a hole slope-wise with a large auger into the body of the Tree, even unto the pith, and then if you will have the fruit yealow, you shall fill the hole with Saffron dissolved in water: if you will have it red, then with Sanders, & of any other colour you please, and then stop the hole up close, and cover it with red or yellow wax: also if you mix the colour with any spice or perfume, the fruit will take a relish or taste of the same: many other such like conceits and experiments are practised amongst men of this Art, but sith they more concerne the curious then the wise, I am not so carefull to bestow my labour in giving more substantiall satisfaction, knowing curiositie loves that best, which proceedes from their most paine, and am content to referre their knowledge to the searching of those Bookes which have onely strangeness for their subject, resolved that this I have written is fully sufficient for the plaine English Husbandman.

Of

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CHAP. VI.

Of the replanting of Trees, and furnishing the Orchard.

AS soone as your seeds, or sets, have brought forth plants, those plants, through time, made able, and have received grafts, and those grafts have covered the heads of the stocks & put forth goodly branches, you shall then take them up and replant them, (because the sooner it is done, the better it is done) in those severall places of your Orchard which before is appointed, and is intended to be prepared, both by dunging, digging, and every orderly labour, to receive every severall fruit. And herein you shall understand, that as the best times for grafting are every month (except *October* and *November*) and at the change of the moone, so the best times for replanting, are *November* and *March* onely, unlesse the ground be cold and moist, and then *January* or *February* must be the soonest alwaies, excepted that you doe not replant in the time of frost, for that is most unwholsome.

Now when you will take up your trees which you intend to replant in your Orchard, you shall first with a spade bare all the maine branches of the roote, and so by degrees digge and loosen the earth from the roote, in such sort, that you may with your owne strength raise the young tree from the ground, which done, you shall not, according to the fashion of *France*, dismember, or disroabe the tree of his beauties, that is to say, to cut off all his upper branches and armes, but you shall diligently preserve them: for I have seene a tree thus replanted after the fall of the leafe to bring forth fruit in the Summer following: but if the tree you replant be old, then it is good to cut off the maine branches within a foote of the stocke, left the

The taking up of trees.

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sappe running upward, and so forsaking the root too suddenly doe kill the whole tree.

When you have taken your tree up, you shall observe how, and in what manner, it stood, that is, which side was upon the South, and received most comfort from the Sunne, and which side was from it and received most shadow and bleakenesse, and in the same sort as it then stood, so shall you replant it againe: this done, you shall with a sharpe cutting-knife, cut off all the maine rootes, within halfe a foote of the tree, onely the small thriddes or twist-rootes you shall not cut at all: then bringing the plant into your Orchard, you shall make a round hole in that place where you intend to set your tree (the rankes, manner, distance and forme whereof hath beene already declared, in the first Chapter:) and this hole shalbe at least foure foote overthwart every way, and at least two foote deepe, then shall you fill up the hole againe, fifteene inches deepe, with the finest blacke mould, tempered with Oxe dung, that you can get, so that then the hole shalbe but nine inches deepe, then you shall take your tree and place it upon that earth, having care to open every severall branch and thrid of the root, and so to place them that they may all looke downe into the earth, and not any of them to look back and turne upward: then shall you take of the earth from whence your tree was taken, and tempering it with a fourth part of Oxe dung, and slekt Sope-ashes (for the killing of wormes) cover all the roote of your tree firmely and strongly: then with greene soddes, cut and joyned artificially together, so sodde the place that the hole may hardly be discerned. Lastly, take a strong stake, and driving it hard into the ground neere unto the new planted tree, with either a soft hay rope, the broad barke of Willow, or some such like unfretting band, tye the tree to the stake, and it will defend it from the rage of winde and tempests, which should they but shake or trouble the roote, being new planted, it were enough to confound and spoyle the tree for ever.

Now, although I have under the title and demonstration

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tion of replanting one tree given you a generall instruction for the replanting of all trees whatsoever, yet forasmuch as some are not of that strength and hardnes to indure so much as some others will, therfore you shall take these considerations by the way, to fortifie your knowledge with.

First, you shall understand that all your dainty and tender grafted Plumbes, and fruits, as Abricots, Peaches, Damaske-Plumbes, Verdochyos, Pescods, Emperialls, and divers such like, together with Orrenges, Cytrons, Almonds, Olives, and others, which indeede are not familiar with our soyles, as being neerer neighbours to the Sunne, doe delight in a warme, fat, earth, being somewhat sandy, or such a clay whose coldnesse by Manure is corrected, and therefore here with us in the replanting of them, you cannot bestow too much cost upon the mould: as for the Damson, and all our naturall English Plumbes, they love a fat, cold, earth, so that in the replanting of them, if you shall lay too much dung unto the root, you shall through the abundant heate, doe great hurt unto the tree. The Cherry delighteth in any clay, so that upon such soyle you may use lesse Manure, but upon the contrary you cannot lay too much. The Medlar esteemeth all earths alike, and therefore whether it be Manured or no, it skilles not, sunne and shadow, wet and drinesse, being all of one force or efficacie. The Peare and Apple-tree delights in a strong mixt soyle, and therefore indureth Manure kindly, so doth also the Quince and Warden: Lastly the Filbert, the Hasel, and the Chesnut, love cold, leane, moist, and sandy earths, insomuch that there is no greater enemie unto them then a rich soyle: so that in replanting of them you must ever seeke rather to correct then increase fertility.

You shall also understand that all such fruit-trees as you doe plant against the walles of your Orchard (of which I have spoken already, & deciphered out their places) you shall not suffer to grow as of themselves, round, and from the wall, but at the times of pruning and dressing of them (which is ever at the begining of the spring and immedi-

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ately after the fall) you ſhall as it were plaſh them, and ſpread them againſt the wall, fouldíng the armes in loopes of leather, and nayling them unto the wall: and to that end you ſhall place them of ſuch a fit diſtance one from another, that they may at pleaſure ſpread and mount, without interruption: the profit whereof is at this day ſeene almoſt in every great mans Orchard: and although I have but onely appointed unto the wall the moſt quaint fruits of forraine nations; yet there is no fruit of our owne, but if it be ſo ordered it will proſper and bring forth his fruit better and in greater abundance. And thus much for the replanting of trees and furniſhing of a well proportioned Orchard.

CHAP. VII.

Of the Dreſſing, Dunging, Proyning, and Preſerving of Trees.

SIth after all the labour ſpent of ingendring by ſeede, of fortifying and inabling by planting, and of multiplying by grafting, it is to little or no purpoſe if the trees bee not maintained and preſerved by dreſſing, dunging, and proyning, I will therefore in this place ſhew you what belongs to that office or duty, and firſt, for the dreſſing of trees: you ſhall underſtand that it containeth all whatſoever is meet for the good eſtate of the tree, as firſt, after your tree is planted, or replanted, if the ſeaſon ſhall fall out hot, dry, and parching, inſomuch, that the moiſture of the earth is ſucked out by the atraction of the Sunne, and ſo the tree wanteth the nutriment of moiſture, in this caſe you ſhall not omit every morning before the riſing of the Sun, and every evening after the ſet of the Sunne, with a great watering-pot filled with water, to water and bathe the roots of the trees, if they be yong trees, and newly planted, or replanted, but not otherwiſe: for

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if the trees be old, and of long growth, then you shall save that labour, and onely to such old trees you shall about the midst of *November*, with a spade, digge away the earth from the upper part of the rootes, and lay them bare untill it be mid *March*, and then mingling such earth as is most agreeable with the fruit and Oxe-dung and Sope-ashes together, so cover them againe, and tread the earth close about them: as for the uncovering of your trees in Summer I doe not hold it good, because the reflection of the Sunne is somewhat too violent and dryeth the root, from whence at that time the sappe naturally is gone: you shall also every Spring and Fall of the leafe, cleanse your fruit trees from mosse, which proceeding from a cold a cankerous moisture, breedeth dislike, and barrainnesse in trees: this mosse you must take off with the backe of an old knife, and leave the barke smooth, plaine, and unraced; also if you shall dung such trees with the dung of Swine, it is a ready way to destroy the mosse.

Proyning of Trees.

After you have dresst and trimmed your trees, you shall then proyne them, which is to cut away all those superfluous branches, armes, or cyons, which being either barraine, bruised, or misplaced, doe like droanes, steale away that nutriment which should maintaine the better deserving sinewes, and you shall understand that the best time for proyning of trees, is in *March* and *April*, at which time the sappe ascending upward, causeth the trees to budde: the branches you shall cut away, are all such as shall grow out of the stocke underneath the place grafted, or all such as by the shaking of tempests shall grow in a disorderly and ill-fashioned crookednesse, or any other, that out of a well tempered judgement shall seeme superfluous and burdensome to the stocke from whence they spring, also such as have by disorder beene broken, or maimed, and all these you shall cut away with a hooke knife, close by the tree, unlesse you have occasion by some misfortune to cut away some of the maine and great armes of the tree, and then you shall not use your knife for feare of tearing the barke,

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but taking your ſawe you ſhall ſawe off thoſe great armes cloſe by the tree, neither ſhall you ſawe them off downeward but upward, leſt the waight of the arme breake the barke from the body: And herein you ſhall alſo underſtand that for as much as the miſchances which beget theſe diſmembrings doe happen at the latter end of Summer, in the gathering of the fruit, and that it is not fit ſuch maimed and broken boughes hang upon the tree till the Spring, therefore you ſhall cut them off in the Winter time, but not cloſe to the tree by almoſt a foote, and ſo letting them reſt untill the ſpring, at that time cut them off cloſe by the tree. Now if you find the ſuperfluitie of branches which annoy your trees to be onely ſmall cyons, ſpringing from the rootes of the trees, as it often happeth with all ſorts of Plumbe-trees, Cherry-trees, Nut-trees, and ſuch like, then you ſhall in the winter, bare the roots of thoſe trees, and cut off thoſe cyons cloſe by the roote: but if your trees be brouſed or eaten by tame-Deere, Goates, Sheepe, Kine, Oxen, or ſuch like, then there is no helpe for ſuch a misfortune but onely to cut off the whole head and graft the ſtocke anew.

Of Barke-bound.

Next to the proyning of trees, is the preſerving, phyſicking, and curing of the diſeaſes of trees, to which they are ſubject as well as our naturall bodies: and firſt of all, there is a diſeaſe called Barke-bound, which is when the barke, through a miſlike and leperous drineſſe, bindeth in the tree with ſuch ſtraightneſſe that the ſappe being denied paſſage the body growes into a conſumption: it is in nature like unto that diſeaſe which in beaſts is called hide-bound, and the cure is thus: at the beginning of *March* take a ſharpe knife, and from the toppe of the body of the tree, to the very roote, draw downe certaine ſlits, or inciſions, cleane through the barke, unto the very ſappe of the tree, round about the tree, and then with the backe of your knife, open thoſe ſlits and annoint them all through with Tarre, and in ſhort ſpace it will give liberty unto the tree to encreaſe and grow: this diſeaſe commeth by the rubbing of cattell againſt the tree, eſpecially Swine, who are very poiſon unto al plants.

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There is another disease in fruit-trees, called the Gall, and it eateth and consumeth the barke quite away, and so in time kills the tree: the cure is to cut and open the barke which you see infected, and with a chissell to take away all that is foule and putrified, and then to clappe Oxe dunge upon the place, and it will helpe it, and this must bee done ever in winter. Of the Gall,

The Canker in fruit trees is the consumption both of the barke and the body, and it commeth either by the dropping of trees one upon another, or else when some hollow places of the tree retaine some raine water in them, which fretting through the barke, poysoneth the tree: the cure is to cut away all such boughes as by dropping breed the evill, and if the hollow places cannot be smooth and made even, then to stoppe them with clay, waxe, and sope-ashes mixt together. Of the Canker.

If the barkes of your trees be eaten with wormes, which you shall perceive by the swelling of the barke, you shall then open the barke and lay there-upon swines dung, sage, and lime beaten together, and bound with a cloath fast to the tree, and it will cure it: or wash the tree with cowes-pisse and vinegar and it will helpe it. Of wormeeaten barkes.

If your young trees be troubled with Pismiers, or Snailes, which are very noysome unto them, you shall take unsleckt lime and sope-ashes and mingling them with wine-lees, spread it all about the roote of the trees so infected, and annoint the body of the tree likewise therewith, and it will not onely destroy them but give comfort to the tree: the soote of a chimney or Oake saw-dust spread about the roote will doe the same. Of Pismiers and Snailes,

If Caterpiliers doe annoy your young trees, who are great devourers of the leaves and young buddes, and spoylers of the barke, you shall, if it bee in the summer time, make a very strong brine of water and salt, and either with a garden pumpe, placed in a tubbe, or with squirts which have many hoales, you shall every second day water and wash your trees, and it will destroy them, because Of Caterpillers, and Earewiggs.

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the Caterpiller naturally cannot indure moisture, but if nevertheleſſe you ſee they doe continue ſtill upon your trees in Winter, then you ſhall when the leaves are fallen away, take dankiſh ſtraw, and ſetting it on fire, ſmeare and burne them from the tree, and ſhall you hardly ever be troubled with them againe upon the ſame trees: roules of hay laid on the trees, will gather up Earewigs and kill them.

Of the barrenneſſe of Trees.

If your trees bee barren, and albeit they flouriſh and ſpread their leaves bravely, yet bring foorth no fruit at all, it is a great ſickneſſe, and the worſt of all other: therefore you ſhall underſtand it proceedeth of two cauſes: firſt, of too much fertilitie, and fatneſſe of the ground, which cauſeth the leafe to put forth and flouriſh in ſuch unnaturall abundance, that all ſuch ſappe and nutriment as ſhould knit and bring forth fruit, turnes onely unto leafe, cyons, and unprofitable branches, which you ſhall perceive both by the abundance of the leaves, and by the colour alſo, which will be of a more blacker and deeper greene, and of much larger proportion then thoſe which have but their naturall and proper rights: and the cure thereof is to take away the earth from the root of ſuch trees, and fill up the place againe with other earth, which is of a much leaner ſubſtance: but if your tree have no ſuch infirmitie of fatneſſe, but beareth his leaves and branches in good order, and of right colour, and yet notwithſtanding is barraine, and bringeth forth little or no fruit, then that diſeaſe ſpringeth from ſome naturall defect in the tree, and the cure thereof is thus: firſt, you ſhall unbare the root of the tree, and then noting which is the greateſt and principalleſt branch of all the root, you ſhall with a great wimble boare a hole into that root, and then drive a pinne of old drie Aſhe into the ſame, (for Oake is not altogether ſo good) and then cutting the pinne off cloſe by the root, cover all the head of the pinne with yellow waxe, and then lay the mould upon the root of the tree againe, and tread it hard and firmely downe, and there is no doubt but the tree will beare the yeere following: In *France* they uſe for this infirmitie to boare a hole

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a hole in the body of the tree slope-wise, somewhat past the heart, and to fill up the hole with life honey and Rose-water mixt together, and incorporated for at least xxiiij. houres, and then to stop the hole with a pinne of the owne wood: also if you wash the rootes of your trees in the drane water which runneth from your Barley when you steepe it for Malt, it will cure this disease of barrennesse.

If the fruit which is upon your trees be of a bitter and sootie taste, to make it more pleasant and sweet, you shall wash your tree all over with Swines dung and water mixt together, and to the rootes of the trees you shall lay earth and Swines dung mixt together, which must be done in the month of *Ianuary* and *February* onely, and it will make the fruit taste pleasantly. And thus much for the dressing and preserving of trees. Of the bitternesse of Fruit.

CHAP. VIII.

Of the Vine, and of his ordering.

FOrasmuch as the nature, temperature, and clymate of our soyle, is not so truely proper and agreeing with the Vine as that of *France*, *Italy*, *Spayne*, and such like, and sith we have it more for delight, pleasure, and prospect, then for any peculiar profit, I will not undertake *Mounsieur Lybaults* painefull labour, in discribing every curious perfection or defect that belongs thereunto, as if it were the onely jewell and commodity of our kingdome, but onely write so much as is fitting for our knowledge, touching the maintenance, increase, and preservation thereof, in our Orchards, Gardens, and other places of recreation.

First, then to speake of the planting or setting of the Vine, your greatest diligence must be, to seeke out the best plants, and if that which is most strange, rare, great, and pleasant be the best, then is that grape which is called Of planting or setting the Vine.

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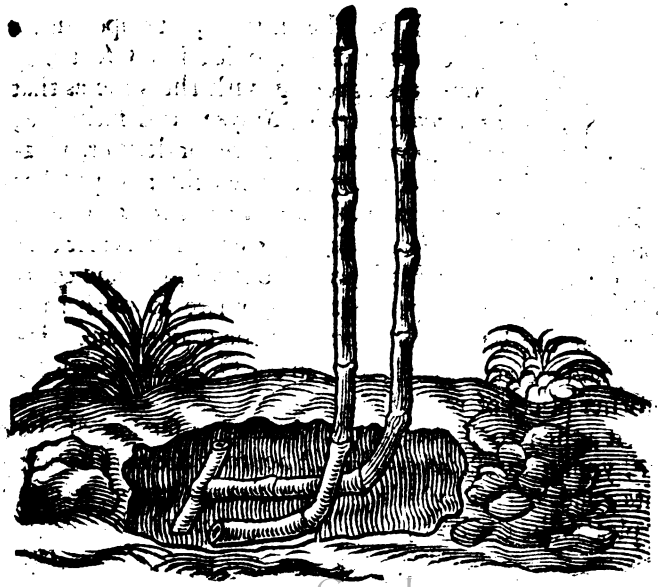
the Muſcadine, or Sacke grape, the beſt, and have their beginning either from *Spaine*, the *Canary* Ilands, or ſuch like places: next to them is the French grape, of which there be many kindes, the beſt whereof is the grape of *Orleance*, the next the grape of *Gaſcoine*, the next of *Burdeaux*, and the worſt of *Rochell*, and not any of theſe but by induſtry will proſper in our Engliſh gardens: when therefore you chuſe you plants, you ſhall chuſe ſuch of the young cyons as ſpringing from the old wood, you may in the cutting cut at leaſt a joynt or two of old wood with the young: for the old will take ſooneſt, and this old wood muſt be at leaſt ſeaven or eight inches long, and the young cyon almoſt a yard, and the thicker and cloſer the joynts of the young cyon are, ſo much the better they are: and the fit time for cutting and gathering theſe ſets are in mid *Ianuary*, then having prepared, digged, and dunged your earth the winter before, you ſhall at the latter end of *Ianuary* take two of theſe ſets, or plants, placing them according to this figure:



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And

And lay them in the earth ſlope-wiſe, at leaſt a foote deepe, leaving out of the earth, uncovered, not above foure or five joynts, at the moſt, and then cover them with good earth firmely, cloſely, and ſtrongly, having regard to raiſe thoſe cyons which are without the earth directly upward, obſerving after they be ſet, once in a month to weede them, and keepe them as cleane as is poſſible: for nothing is more noyſome unto them then the ſuffocating of weeds; alſo you ſhall not ſuffer the mould to grow hard or bind about the rootes, but with a ſmall ſpade once in a fortnight to looſen and breake the earth, becauſe their rootes are ſo tender that the leaſt ſtraitning doth ſtrangle and confound them. If the ſeaſon doe grow dry, you may uſe to water them, but not in ſuch ſort as you water other plants, which is to ſprinkle water round about the earth of the rootes, but you ſhall with a round Iron made for the purpoſe, ſomewhat bigger then a mans finger, make certaine holes into the earth, cloſe upon the roote of the Vine, and powre therein either water, the dregs of ſtrong-Ale, or lees of Wine, or if you will you may mixe with the lees of Wine either Goates-milke, or Cowes-milke, and powre it into the holes, and it will nouriſh the Vine exceedingly, and not the Vine onely, but all ſorts of dainty grafted Plumbs, eſpecially Peaches.

Of proyning the Vine.

Now for proyning the Vine, you ſhall underſtand that it is ever to bee done after the fall of the leafe, when the ſappe is deſcended downeward: for if you ſhall proyne, or cut him either in the ſpring, or when the ſappe is aloft, it will bleede ſo exceedingly, that with great difficultie you ſhall ſave the body of the tree from dying: and in proyning of the Vine you ſhall obſerve two things, the firſt, that you cut away all ſuperfluous cyons and branches, both above and below, which either grow diſorderly above, or fruitleſſely below, and in cutting them you ſhall obſerve, neither to cut the old wood with the young cyon, nor to leave above one head or leaden upon one branch: ſecondly, you ſhall in proyning, plaſh and ſpread the Vine

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thinnely against the wall, giving every severall branch and cyons his place, and passage, and not suffer it to grow loosely, rudely, or like a wild thorne, out of all decencie and proportion: for you must understand that your Grapes doe grow ever upon the youngest cyons, and if of them you shall preserve too many, questionlesse, for want of nourishment they will lose their vertue, and you your profit. Now if your Vine be a very old Vine, and that his fruit doth decay, either in quantitie or proportion; if then you finde he have any young cyons which spring from his root, then, when you proyne him, you shall cut away all the old stocke, within lesse then a handfull of the young cyons, and make them the leaders, who will prosper and continue in perfection a long time after, especially if you trim the rootes with fresh earth, and fresh dung. Againe, if you be carefull to looke unto your Vine, you shall perceive close by every bunch of grapes certaine small thridde-like cyons, which resemble twound wyars, curling and turning in many rings, these also take from the grapes very much nutriment, so that it shall be a labour very well imployed to cut them away as you perceive them.

Experiments of the Vine.

Now from the Vine there is gathered sundry experiments, as to have it taste more pleasant then the true nature of the grape, and to smell in the mouth odoriferously, or as if it were perfumed, which may be done in this sort: Take Damaske-rose-water, and boyle therein the powder of Cloaves, Cynamon, three graines of Amber, and one of Muske, and when it is come to bee somewhat thicke, take a round goudge and make a hole in the maine stocke of the Vine, full as deepe as the heart thereof, and then put therein this medicine, then stopping the hole with Cypresse, or Iuniper, lay greene-wax thereupon, and bind a linnen cloath about it, and the next grapes which shall spring from that Vine, will taste as if they were preserved or perfumed.

If you will have grapes without stones, you shall take your plants and plant the small ends downeward and bee assured your desire is attained.

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The Vine naturally of himselfe doth not bring forth fruit till it have beene three yeares planted: but if evening and morning for the first moneth you will bath his roote with Goats-milke or Cowes-milke, it will beare fruit the first yeare of his planting. Lastly, you may if you please graft one Vine upon another, as the sweet upon the sower, as the Muskadine grape, or greeke, upon the Rochell or Burdeaux, the Spanish, or Iland grape, on the Gascoyne, and the Orleance upon any at all: and these compositions are the best, and bring forth both the greatest and pleasantest grapes: therefore whensoever you will graft one grape upon another, you shall doe it in the beginning of *Ianuary*, in this sort: first, after you have chosen and trimmed your grafts, which in all sorts must bee like the grafts of other fruits, then with a sharpe knife, you shall cleave the head of the Vine, as you doe other stockes and then put in your graft, or cyon, being made as thinne as may be, and see that the barkes and sappes joyne even and close together, then clay it, mosse it, and cover it, as hath beene before declared.

If your Vine grow too ranke and thicke of leaves, so that the sappe doth waste it selfe in them, and you thereby lose the profit of the fruit, you shall then bare all the rootes of the Vine, and cast away the earth, filling up the place againe with sand and ashes mingled together: but if the Vine be naturally of it selfe barraine, then with a goudge you shall make a hole halfe way through the maine body of the Vine, and drive into the hole a round pible stone, which although it goe straitly in, yet it may not fill up the hole, but that the sicke humour of the Vine may passe thorow thereat: then cover the roote with rich earth, and Oxe dung mixt together, and once a day for a moneth water it with old pisse, or urine of a man, and it will make the tree fruitfull: if the Vine bee troubled with Wormes, Snailes, Ants, Earewigges, or such like, you shall morning and evening sprinkle it over with cowes-pisse and vineger mixt together & it will helpe it: & thus much for ordering the Vine.

The medicining of the Vine.

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CHAP. IX.

The Office of the Fruiterer, or the Gatherer, and Keeper of Fruit.

AFter you have planted every severall quarter, ally, and border within your Orchard, with every severall fruit proper unto his place, and that you have placed them in that orderly and comely equipage which may give most delight to the eye, profit to the tree, and commendations to the workeman, (according to the forme and order prescribed in the first Chapter) and that now the blessing of the highest, time, and your endeavours hath brought forth the harvest and recompence of your travell, so that you behold the long-expected fruit hang upon the trees, as it were in their ripenesse, wooing you to plucke, taste, and to deliver them from the wombs of their parents, it is necessary then that you learne the true office of the Fruiterer, who is in due season and time to gather those fruits which God hath sent him: for as in the husbanding of our graine if the Husbandman bee never so carefull, or skilfull, in ploughing, dunging, sowing, weeding and preserving his crop, yet in the time of harvest bee negligent, neither regarding the strength or ripenesse thereof, or in the leading and mowing respects not whether it be wet or dry, doth in that moments space loose the wages of his whole yeeres travell, getting but durt from durt, and losse from his negligence: so in like case holds it with all other fruits, if a man with never so great care and cost procure, yet if he be irrespective in the gathering, all his former businesse is vaine and to no purpose; and therefore I hold nothing more necessary then the relation of this office of the Fruiterer, which is the consummation and onely hope of our cost, and diligence, teaching us to gather wisely what we have planted warily,

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warily, and to eat with contentment what we have preserved with care.

Know then, that of all Fruits (for the most part) the Cherry is the soonest ripe, as being one of the oldest children of the Summer, and therefore first of all to be spoken of in this place, yet are not all Cherries ripe at one instant, but some sooner then other some, according to the benefit of the Sunne, the warmth of the ayre, and the strength of sap in the branch on which the Cherry hangeth: they are a Fruit tender and pleasant, and therefore much subject to bee devoured and consumed with Birds of the smallest kindes, as Sparrowes, Robins, Starlings, and such like, especially the Jay, and the Bal-finch, who will devoure them stones and all, even so fast as they ripen: for prevention whereof, if you have great abundance of Cherry trees, as maine holts that bee either one or many akers in compasse, you shall then in divers places of your holts, as well in the midst, as out-corners, cause to bee erected up certaine long poales of Firre, or other wood, which may mount somewhat above the tops of the trees, and on the toppes of those poales you shall place certaine Clapp-milles, made of broken trenchers joyned together like sayles, which being mooved and carryed about with the smallest ayre, may have underneath the sayles a certaine loose little board, against which every sayle may clap, and make a great noyse, which will affright and scare the Birds from your trees: these milles you shall commonly see in Husbandmens yards placed on their stackes or hovells of Corne, which doth preserve them from fowle and vermine: but for want of these clap-milles you must have some boy or young fellow that must every morning from the dawning of the day till the Sunne bee more then an houre high, and every evening from five of the clocke till nine, runne up and downe your ground, whooping, showting, and making of a great noyse, or now and then shooting of some Harquebush, or other Peece: but by no meanes to use slings or throwing of stones, lest by the miscarriage

Of gathering and preserving Cherries.

of

of his hand hee either beate downe the fruit or bruise the trees. In this sort having preserved your Cherries from destruction, you shall then know their ripenesse by their colours, for ever those which are most red, are most ripe, and when you see any that are ripe, you shall take a light ladder, made either of fyrre or sallow, and setting it carefully against the branches, so as you neither bruise them nor the fruit, you shall gather those you finde ripe, not taking the fruit from the stalke, but nipping the stalke and fruit both together from the tree: also you shall bee carefull in gathering to handle or touch the Cherry so little as may bee, but the stalke onely, especially if your hands bee hot, or sweaty, for that will change the colour of your Cherries, and make them looke blacke: if there bee any ripe Cherries which hang out of the reach of your hands, then you shall have a fine small gathering hooke of wood, whose bout shall bee made round, and smooth, for nipping the barke of the branches, and with it you shall gently pull unto you those branches you cannot reach: you shall also have a little round basket of almost a foote deepe, made with a five bottome, having a handle thwart the toppe, to which a small hooke being fastned, you shall with that hooke hang the basket by you on some convenient cyon, and as you gather the Cherries, gently lay them downe into the same, and when you have filled your basket you shall descend and empty it into larger great baskets made of the same fashion, with five bottomes, and having underneath two broad lathes or splinters, at least three fingers broad a peece, within foure inches one of the other, and going both one way crosse overthwart the basket, that if either man or woman shall carry them upon their heads, which is the best manner of carriage, then the splinters may defend the bottome of the basket from the head of the party, and keepe the Cherries from hurt or bruising, and if you have occasion to carry your Cherries farre, and that the quantity grow beyond the support of a man, then you shall packe them in hampers, panniers made with

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like bottomes like sives, and finely lined on the out side with white straw, and so being closely truste on each side a Horses backe, so carry them whither you please. You shall by no meanes suffer your Cherries to lye in any great or thicke heapes one upon another, but until you sell them, or use them, lay them as thinne as may be, because they are apt of themselves to sweat and catch heate, and that heate doth soone deprive them of the glory of their colour. When you gather any Cherries to preserve, you shall gather those which are the greatest, the ripest, you shall pull them from their stalkes one by one, and use them at furthest within foure and twenty houres after the time they are gotten.

For the gathering of Plumbes in generall, it is in the same manner as you did gather your Cherries, both with such like ladder, such like hooke, and such like vessels, only some more speciall observations are to bee observed in gathering your dainty grafted Plumbes, then of the others which are of a more hard and lasting nature. You shall know when they are for gathering of Abricots, Peaches, Damascen Plumbes, and such like grafted Plumbes, you shall duly consider when they are perfectly ripe, which you shall not judge by their dropping from the tree, which is a signe of over much ripenesse, tending to rottennesse, but by the true mixture of their colour, and perfect change from their full complexion: for when you shall perceive that there is no greenenesse nor hardnesse in their buttocks, no, not so much as in the setting on of the stalke, you may then judge that they are ready to be gathered, and for a perfecter tryall thereof you may if you please, take one which you thinke ripe from the tree, and opening it, if you see the stone come cleane and dry away and not any of the inward of the fruit cleaving unto it, then you may assure your selfe that the fruit is ready to be gathered, which you shall with great diligence and care gather, not by any meanes laying one Plumbe upon another, but each severally by another, for these dainty Plumbes are naturally so tender that the least touch, though of themselves, doth bruise them,

The gathering of stone fruit.

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and occasion rottennesse. Now when you have gathered them, if either you have desire to send them any journey, as in gratulation to your friends, or for other private commoditie, you shall take some close, smooth boxe, answerable to the store of fruit you are to send, and first line it within all over with white paper, then lay your Plumbes one by one all over the bottome of the boxe, then covering them all over with white paper, lay as many more upon the toppe of them, and cover them likewise with paper as before, and so lay row upon row with papers betweene them, untill the boxe bee sufficiently filled, and then closing it up send it whither you please, and they will take the least hurt, whereas if you should line the boxe either with hay or straw, the very skins are so tender that the straw would print into them and bruise them exceedingly, and to lay any other soft thing about them, as either wooll or bumbast, is exceeding evill, because it heateth the Plumbes, and maketh them sweat, through which they both loose their colour and rot speedily. As touching the gathering of Plumbes when they are hard, and to ripen them afterwards by laying them upon nettles, to which conceit the most of our *London*-Fruiterers, I am utterly against the opinion, because I both know nature to be the perfectest worke-Mistris, and where shee is abridged of her power there ever to follow disorders and imperfections, and also that when such things are done, as it were through an overhasty constraint, there cannot proceed any thing but abortivenesse, and a distastfull relish: from whence I thinke it comes to passe that in *London* a man shall very seldome taste a delicate or well relisht Plumbe, unlesse it bee from such as having fruit of their owne, make no commoditie thereof more then their owne pleasures: yet thus much I would perswade every one, that if they have more Plumbes ripe at once then they can use, or spend, that then after they are gathered, to spread them thinly upon Nettles or Vine-tree leaves, and it will preserve them sound and well coloured a long time together, but if your store be

Of gathering hard Plumbes.

Of keeping of Plumbes.

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so superabundant that in no reasonable time you can spend them, then what you doe not preserve, or make Godiniake, or Marmulade of, the rest you shall take and sprinkling them over with sweet-wort, or growt, and then laying them one by one (yet so as they may not touch one another) upon hurdles or sleakes made of wands, or twigges, and put them into an Oven after Bread or Pyes have beene tane thereout, and so leasurely dry them; and they will not onely last, but tast pleasantly all the yeare after: and in this sort you may use all kindes of Plumbes or Peares whatsoever. Now for the gathering of the other ordinary sorts of ungrafted Plumbes, which have both much stronger rindes, and are lesse subject to rotting, you shall gather them, carry, or transport them, in the same manner that you did your Cherries, onely in these, as in all other sorts of fruits whatsoever, you shall not omit never to gather, or put them from the tree, till the dew bee dried cleane both from the plants and from the trees, and that the day be dry, faire, and full of sunne-shine: for the least wet or moisture doth canker and rot the fruit.

As touching the gathering of Peares, though sundry Fruiterers observe sundry wayes in gathering them, as some making more haste then good speed, as either to have the first taste, or the first profit, some using more negligence, thinking their store so great it will never bee consumed, and some so curious, that they will not gather till their Peares fall into their bosomes, all which are disputeable fashions, yet I for my part would ever advise all diligent husbands to observe a mediocritie, and take the fittest season for the gathering of his fruit: as thus for example. If because you are unexperienced or unacquainted with the fruit you doe not know the due time of his ripening, you shall observe the colour of the Peare, and if you see it doe alter, either in part, or in all, you shall be assured the fruit is neere ripening, for Peares doe never change their colours, but when they doe desire to bee taken from the tree: and of all fruit the Peare may be gathered the hardest, because

Of the gathering of Peares

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because both his owne naturall heate and peculiar quality will ripen him best with lying: yet to be more strongly fortified in the knowledge of the ripenesse of your fruit, and because it is better to get a day too late, then an houre too early, you shall before you gather your Peares, whether they bee Summer fruit or Winter fruit, or whether you meane to spend them soone or preserve them long, take one of them from the tree, which is neither the ripest nor the greenest, but betwixt both, and cut it through the midst with your knife, not long-wise, but overthwart, and then looke into the coare where the kirnels lye, and if it bee hollow so as the kirnels lye as it were hollow therein, the neather ends thereof being turned either blacke, or blackish, albeit the complexion of the Peare be little or not at all altered, yet the Peares have their full growth, and may very well be gathered: then laying them either upon a bed of ferne, or straw, one upon another, in great thicknesse, their owne naturall heate will in short space ripen them, which you shall perceive both by the speedy changing of their colour, and the strength of their smell, which will be exceeding suffocating, which as soone as you perceive, you shall then spread them thinner and thinner, untill they be all ripe, and then lay them one by one, in such sort as they may not touch one another, and then they will last much the longer, you shall also after they bee ripe, neither suffer them to have straw nor ferne under them, but lay them either upon some smooth table, boards, or flaskes of wands, and they will last the longer.

Of transporting, or carrying of Peares farre.

If you bee to carry or transport Peares farre, you shall then gather them so much the sooner, and not suffer any ripe one to bee amongst them, and then lining great wicker baskets (such as will hold at least quarters a peece) finely within with white straw, fill them up with Peares, and then cover them with straw, and corde them above, and you may either transport them by Land or Sea, whither you please, for they will ripen in their carriage: but when you come to your place of residence, then you must needs

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needs unpacke them, and spread them thinner, or else they will rot and consume in a sodaine.

There be sundry wayes of gathering Peares, or other fruit as namely, to climbe into the tree and to have a basket with a line fastned thereto, and so when it is filled, to let it downe, and cause it to be emptied, which labour though some of our Southerne Fruiterers doe not much commend, yet for mine owne part I doe not see much errour therein, but that it is both allowable and convenient, both because it neither bruiseth the fruit, nor putteth the gatherer to any extraordinarie labour, onely the imaginary evill is, that by climbing up into the tree, he that gathereth the fruit, may indanger the breaking, slipping, and dismembring of many of the young eyons, which breedeth much hurt and damage to the tree, but judgement, and care, which ought to be appropriate to men of this qualitie, is a certaine preventer of all such mischiefes. Now for such as in gathering of their fruit doe every time that the basket is full, bring it downe themselves from the tree, and empty it by powring the fruit rudly, and boysterously forth, or for beating of fruit downe with long poales, loggets, or such like, they are both most vilde, and preposterous courses, the first being full of too much foolish and carelesse trouble, the latter of too much disorder and cruelty, ruining in a moment what hath beene many yeares in building: as for the climbing the tree with a ladder, albeit it be a very good way for the gathering of fruit, yet if it be never so little indiscreetly handled, it as much hazardeth the breaking and bruising both of the fruit and the small eyons, as either climbing the tree, or any other way whatsoever.

Of gathering diverſly.

Now for the gathering of your Apples you shall understand that your Summer fruit, as your Lenting Wilbourne, and such like, are first to be gathered, whose ripenesse you may partly know by the change of colour, partly by the pecking of Birds, but chiefly by the course formerly described for your knowledge of the ripenesse of the Peare, which is the hollownesse of eare, and liberty of the kernel

The gathering of Apples.

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onely, and when you doe perceive they are ripe, you shall gather them in such wise as hath beene declared for the gathering of your Peares, without respecting the state of the Moone, or any such like observation, but when you come to gather your Winter-fruit, which is the Pippin, Peare-maine, Russetting, Blacke-annat, and such like, you shall in any wise, gather them in the wane of the Moone, and, as before I said, in the dryest season that may be, and if it be so that your store be so great that you cannot gather all in that season, yet you shall get so much of your principall fruit, the youngest and fairest, as is possible to be gotten, and preserve it for the last which you intend either to spend, or utter. Now, for the manner of gathering your Apples I doe not thinke you can devise or approve a better way then that which hath beene described for the gathering of Peares; yet some of our late practitioners (who thinke themselves nor cunning if they be not curious) dislike that way, and will onely have a gathering apron, into which having gathered their fruit, they doe empty it into larger vessels: this gathering apron is a strong peece of Canvasse at least in eleven way, which having the upper end made fast about a mans neck, & the nether end with three loopes, that is, one at each corner, & one at the midst, through which you shall put a string and binde it about your waste, insomuch, that both the sides of your apron being open, you may put your fruit therein with which hand you please: this manner of gathering Apples is not amisse, yet in my conceit, the apron is so small a defence for the Apples, that if it doe but knocke against the boughes as you doe move your selfe, it cannot choose but bruise the fruit very much, which ought ever to be avoyded: therefore still I am of this opinion, there is no better way, safer, nor more easie, then gathering them into a small basket, with a long line thereat, as hath beene before declared in the gathering of Peares. Now you shall carefully observe in emptying one basket into another, that you doe it so gently as may be, least in powring them out too rudely the stalkes

of

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of the fruit doe pricke one another, which although it doe appeare little or nothing at the first, yet it is the first ground, cause, and beginning of rottennesse, and therefore you shall to your vtermost power gather your Apples with as small stalkes as may be, so they have any at all, which they must needs have, because that as too bigge stalkes doe pricke and bruise the fruit, so to have none at all makes the fruit rot first in the place where the stalke should be: you shall also keepe your fruit cleane from leaves, for they being greene and full of moisture, when by reason of their lying close together, they begime to wither, they strike such an heate into the Apples, that they mil-dew and rot instantly.

Of Fallings.

As touching your Fallings, which are those Apples which fall from your trees, either through too much ripenesse, or else through the violence of winde, or tempests, you shall by no meanes match them, or mixe them with your gathered fruit, for they can by no meanes last or indure so long, for the latter which fall by force of wind, wanting the true nourishment of the earth, and the kindly ripening upon the tree, must necessarily shrinke, wither, and grow rivelled, so that your best course is to spend them presently, with all speed possible: for the other which hath too much ripenesse from the earth, and the tree, though it bee much better then the other, yet it cannot be long lasting, both because it is in the falling bruised, and also hath too much ripenesse, which is the first steppe to rottennesse, so that they must likewise be spent with all expedition. For the carriage of your Apples, if the place be not farre, whither you should carry them, you shall then in those large baskets into which you last emptied them, carry them upon cole-staves, or stangs, betwixt two men, and having brought them carefully into your Apple-loft, powre them downe gently upon bedds of ferne or straw, and lay them in reasonable large heapes, every sort of Apples severall by themselves, without mixture, or any confusion: and for such Apples as you would have to ripen soone, you shall

Of carriage and keeping Fruit.

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shall cover them all over with some ash, but for such as you would have take all possible heede in ripening, those you shall lay neither upon straw, mat, nor straw, but upon the bare boards; nay, if you lay them upon a platter floore (which is of all floores the coldest) and *Balm under ever rode*, it is not amisse, but very profitable, and the thinner you lay them so much the better. Now if you have any farre journey to carry your Apples, either by land, or by water, then trimming and lyning the insides of your baskets with ferne, or wheate-straw woven as it were cleane through the basket, you shall packe, cover, and cord up your Apples, in such sort as you did your Peares, and there is no danger in the transportation of them, be it by shippe, cart, waggon, or horse-backe. If you be inforced to packe sundry sort of Apples in one basket, see that betwixt every sort you lay a division of straw, or ferne, that when they are unpackt, you may lay them againe severally: but if when they are unpacked, for want of roome you are compelled to lay some sorts together, in any wise observe to mixe those sorts together which are nearest of taste, likest of colour, and all of one continuance in lasting. as for the packeing up of fruit in hogsheads, or shooting them under hatches when you transport them by Sea, I like neither of the courses, for the first is too close & nothing more then the want of ayre doth rot fruit, the other is subject to much wet when the breach of every Sea endangereth the washing of the Apples, and nothing doth more certainly spoyle them. The times most unseasonable for the transporting of fruit, is either in the month of *March*, or generally in any frosty weather, for if the sharpe coldnesse of those ayres doe touch the fruit, it presently makes them looke blacke, and rivelled, so that there is no hope of their continuance.

The place where you shall lay your fruit must neither be too open, nor too close, yet rather close then open, it must by no meanes be low upon the ground, nor in any place of moistnesse: for moisture breedes fustinesse, and such naughty

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naughty smells easily enter into the fruit, and taint the relish thereof, yet if you have no other place but some low cellar to lay your fruit in, then you shall raise shelves round about, the neereſt not within two foot of the ground, and lay your Apples thereupon, having them firſt lyned, either with ſweete Rye-ſtraw, Wheat-ſtraw, or dry ferne: as theſe undermoſt roomes are not the beſt, ſo are the uppermoſt, if they be unſeeld, the worſt of all other, becauſe both the ſunne, winde, and weather, piercing through the tiles, doe annoy and hurt the fruit: the beſt roome then is a well ſeeld chamber, whoſe windowes may be ſhut and made cloſe at pleaſure, ever obſerving with ſtraw to defend the fruit from any moiſt ſtone wall, or duſty mud wall, both which are dangerous annoyances.

Now for the ſeparating of your fruit, you ſhall lay theſe neereſt hand, which are firſt to be ſpent, as thoſe which will laſt but till *Alhollowtide*, as the Ciſling, Wibourne, and ſuch like, by themſelves: thoſe which will laſt till *Chriſtmaſſe*, as the Goſſard, Pome-water, Queene-Apple, and ſuch like, thoſe which will laſt till *Candlemas*, as the Pome-de-roy, Gooſe-Apple, and ſuch like, and thoſe which will laſt all the yeare, as the Pippin, Dusing, Ruſſetting, Peare-maine, and ſuch like, every one in his ſeverall place, and in ſuch order that you may paſſe from bed to bed to cleanſe or caſt forth thoſe which be rotten or putrified at your pleaſure, which with all diligence you muſt doe, becauſe thoſe which are tainted will ſoone poyſon the other, and therefore it is neceſſary as ſoone as you ſee any of them tainted, not onely to cull them out, but alſo to looke upon all the reſt, and divide them into three parts, laying the ſoundeſt by themſelves, thoſe which are leaſt tainted by themſelves, and thoſe which are moſt tainted by themſelves, and ſo to uſe them all to your beſt benefit. The ſeparating of Fruit.

Now for the turning of your longeſt laſting fruit you ſhall know that about the latter end of *December* is the beſt time to beginne, if you have both got and kept them in ſuch ſort as is before ſaid, and not mixt fruit of more early

early ripening amongst them: the second time you shall turne them, shall be about the end of *February*, and so consequently once every month till *Penticost*, for as the yeere time increaseth in heate, so fruit growes more apt to rot: after *Whitsontide*, you shall turne them once every fortnight, alwayes in your running, making your heapes thinner and thinner; but if the weather be frosty, then stirre not your fruit at all, neither when the thaw is, for then the fruit being moist, may by no meanes be touched: also in wet weather fruit will be a little dankish, so that then it must be forborne also, and therefore when any such moistnesse hapneth, it is good to open your windowes and let the ayre dry your fruit before it be turned: you may open your windowe any time of the yeere in open weather, as long as the Sunne is uppon the skye, but not after, except in *March* onely, at what time the ayre and winde is so sharpe that it taineth and riveleth all sorts of fruits whatsoever.

To keepe fruit in frost. If the frost be very extreame, and you feare the endangering your fruit, it is good to cover them some what thick with fine hay, or else to lay them covered all over either in Barley-chaffe, or dry Salt: as for the laying them in chests of Iuniper, or Cypresse, it is but a toy, and not worth the practise: if you hang Apples in nettes within the ayre of the fire it will keepe them long, but they will be dry and withered, and will loose their best rellish.

Of Wardens. Now for the gathering, keeping, ordering, and preserving of Wardens, they are in all sorts, and in all respects to be used as you doe use your Peares, onely you are to consider that they are a fruite of a much stronger constitution, have a much thicker skinne, and will endure much harder season, neither ought you to seeke to ripen them in haste, or before the ordinary time of their owne nature, and therefore to them you shall use neither straw, ferne, nor hay, but onely dry boards to lay them upon, and no otherwise.

Of Medlars and Services. For your Medlars, you shall gather them about the midst of *October*, after such time as the frost hath nipt and

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bitten them, for before they will not be ready, or looſen from the ſtalke, and then they will be nothing ripe, but as hard as ſtones, for they never ripen upon the tree, therefore as ſoone as you have gathered them, you ſhall packe them into ſome cloſe veſſell, and cover them all over, and round about, with thicke woollen cloathes, and about the cloathes good ſtore of hay, & ſome other waight of boards, or ſuch like upon them, all which muſt bring them into an extreame heate, without which they will never ripen kindly, becauſe their ripeneſſe is indeed perfect rottenneſſe: and after they have layne thus, at leaſt a fortnight, you ſhall then looke upon them, and turning them over, ſuch as you finde ripe you ſhall take away, the reſt you ſhall let remaine ſtill, for they will not ripen all at once, and thoſe which are halfe ripe, you ſhall alſo remove into a third place, leaſt if you ſhould keepe them together, they ſhould beginne to grow mouldy before the other were ready; and in the ſelfe ſame manner as you uſe your Medlars, ſo you ſhall uſe your Services, and they will ripen moſt kindely: or if you pleaſe, to ſticke them betwixt large cloaven ſtickes, and to ſprinkle a little old beare upon them, and ſo ſet them in a cloſe roome, they will ripen as kindly as any other way whatſoever.

Now for Quinces, they are a fruit which by no meanes you may place neere any other kind of fruit, becauſe their ſent is ſo ſtrong and piercing, that it will enter into any fruit, and cleane take away his naturall relliſh: the time of their gathering is ever in *October*, and the meeteſt place to lay them in, is where they may have moſt ayre, ſo they may ly dry (for wet they can by no meanes indure) alſo they muſt not ly cloſe, becauſe the ſmell of them is both ſtrong and unwholſome: the bed wheron they muſt ly muſt be of ſweet ſtraw, and you muſt both turne them and ſhift them very often, or elſe they will rot ſpeedily: for the tranſporting or carrying them any long journey, you muſt uſe them in all things as you uſe your Peares, and the carriage will be ſafe. Of Quinces.

For Nuts, of what ſort ſoever they be, you ſhall know Of Nuts.

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they are ripe as soone as you perceive them a little browne within the huske, or as it were ready to fall out of the same, the skill therefore in preserving of them long from dryneſſe, is all that can be desired at the Fruiterers hands: for as touching the gathering of them, there is no scruple to be observed, more then to gather them cleane from the tree, with the helpe of hookes and such like, for as touching the bruising of them, the shell is defence sufficient. After they be gathered, you shall shale them, and take them cleane out of their huskes, and then for preserving them from either wormes, or drineſſe, it shall bee good to lay them in some low cellar, where you may cover them with sand, being first put into great bagges or bladders: some French-men are of opinion, that if you put them into vessels made of Wal-nut-tree, and mixe Iuy-berries amongst them, it will preserve them moist a long time; others thinke, but I have found it uncertaine, that to preserve Nuts in Honey, will keepe them all the yeere as greene, moist, and pleasant, as when they hung upon the tree: The Dutch-men use (and it is an excellent practice) to take the cruſht Crabbes (after your verdjuyce is strained out of them) and to mixe it with their Nuts, and so to lay them in heapes, and it will preserve them long; or otherwise if they be to be transported, to put them into barrell, and to lay one layre of cruſht Crabbes, and another of Nuts, untill the barrell be filled, and then to close them up, and set them where they may stand coole. But above all these foresaid experiments, the best way for the preserving of Nuts is to put them into cleane earthen pots, and to mixe with them good store of salt, and then closing the pots close, to set them in some coole cellar, and cover them all over with sand, and there is no doubt but they will keepe coole, pleasant and moist, untill new come againe, which is a time fully convenient.

Of Grapes. Now to conclude, for the keeping of Grapes, you shall first understand that the best time for their gathering is in the wane of the Moone, and about the midst of *October*,

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as for the knowledge of his ripenesse it is ever at such time as his first colour is cleane altered, for all Grapes before they bee ripe, are of a deepe thicke greene colour, but after they bee ripe, they are either of a bluish red, or of a bright shining pale greene. Now for the preserving them for our English use, which is but onely for a fruit-dish at our Tables, for neither our store, nor our soyle, affords us any for the wine-presse, some thinke it good, after they are gotten, to lay them in fine dry sand, or to glasse them up in close glasses where the ayre cannot peirce, will keepe them long, both full, plumpe, and sweet; but in my conceit the best course is after they are gotten, to hang them upon strings bunch by bunch, in such places of your house as they may take the fyre of the fire, and they will last longest, and keepe the sweetest.

CHAP. X.

Of the making of Cyder, or Perry.

CYder is a certaine liquor or drinke made of the juyce of Apples, and Perry the like, made of Peares, they are of great use in *France*, and very wholsome for mans body, especially at the Sea, and in hot Countries: for they are coole and purgative, and doe prevent burning agues: with us here in *England* Cyder is most made in the West parts, as about *Devon-shiere* and *Cornwaile*, and Perry in *Worcester-shire*, *Glocester-shire*, and such like, where indeed the greatest store of those kinds of fruits are to bee found: the manner of making them is, after your fruit is gotten, you shall take every Apple, or Peare by it selfe, and looking upon them, picke them cleane from all manner of filthinesse, as bruisings, rottennesse, worme-eating, and such like, neither leave upon them any stalkes, or the blacke buds which are and grow upon the tops of the fruit, which done you shall put them into some

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very cleane vessell, or trough, and with beetels, made for the purpose, bruise or crush the Apples or Peares in peeces, and so remove them into other cleane vessels, till all the fruit be bruised: then take a bagge of haire-cloth, made at least a yard, or three quarters, square, and filling it full of the crusht fruit, put it in a presse of wood, made for the purpose, and presse out all the juyce and moisture out of the fruit, turning and tossing the bagge up and downe, untill there be no more moisture to runne forth, and so bagfull after bagfull, cease not untill you have prest all: wherein you are especially to observe, that your vessels into which you straine your fruit be exceeding neate, sweet, and cleane, and there be no place of ill savour, or annoyance neare them, for the liquor is most apt, especially Cyder, to take any infection. As soone as your liquor is prest forth, and hath stood to settle, about twelve houres, you shall then turne it up into sweet hogsheads, as those which have had in them last, either White-wine or Clarret, as for the Sacke vessell it is tollerable, but not excellent: you may also if you please make a small long bagge of fine linnen cloth, and filling it full of the powder of Cloves, Mace, Cynamon, Ginger, and the dry pils of Lemons, and hang it with a string at the bung-hole into the vessell, and it will make either the Cyder or Perry, to taste as pleasantly as if it were Renish-wine, and this being done you shall clay up the bung-hole with clay and salt mixt together, so close as is possible. And thus much for the making of Perry or Cyder.

CHAP.

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CHAP. XI.

Of the Hoppe-garden, and first of the ground and situation thereof.

THat the Hop is of great use and commoditie in this kingdome, both the Beere, which is the generall and perfect drinke of our nation, and our daily trafficke, both with *France*, the *Low-countries*, and other nations, for this commoditie, is a continuall testimonie; wherefore the first thing to be considered of in this worke, is the goodnesse and aptnesse of the ground for the bringing forth of the fruit thereof, wherein I thus farre consent with Master *Scot*, that I doe not so much respect the writings, opinions, and demonstrations, of the Greeke, Latine, or French Authors, who never were acquainted with our soyles, as I doe the daily practice and experience which I collect, both from my owne knowledge, and the labors of others my Countrey-men, best seene and approved in this Art: therefore to come to my purpose, you shall understand that the light sand, whether it be red or white, being simple and unmixed is most unfit for the planting of Hops, because that through the barrennesse, it neither hath comfort for the roote, nor through his separate lightnesse, any strong hold to maintain and keepe up the poles: likewise the most fertill rich ; blacke clay, which of all soyles is the best and most fruitfull is not to be allowed for a Hoppe-garden, because his fatnesse and juyce is so strong that the roote being as it were over-fed, doth make the branches bring forth leaves in such infinite abundance, that they leave neither strength nor place for the fruit, either to knit, or put forth his treasure, as I have seene by experience in many places: as for the earth which is of a morish blacke wet nature, and lieth low, although I have often times seene good Hoppes to grow thereupon, being well trenchr, and the hils

Fit ground for Hops.

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hils cast high to the best advantage, yet it is not the principall ground of all others, because it is never long lasting, but apt to decay and grow past his strength of bearing. The grounds then which I have generally seene to beare the best Hoppes, and whose natures doe the longest continue with such fruit, are those mixt earthes which are clayes with clayes, as blacke with white, or clayes and sands of any sorts, wherein the soyle is so corrected as neither too much fatnesse doth suffocate, nor too much leannesse doth pine: for I had ever rather have my Hoppe-garden desire increase, then continually labour in abatement. And although some doe exceedingly condemne the chalke-ground for this use, yet I have not at any time seene better Hoppes, or in more plenty, then in such places, as at this day may bee seene in many places about *Hartford-shire*. To conclude, though your best mixt earthes bring forth the best Hoppes, yet there is no soyle, or earth, of whatnature soever it be (if it lye free from inundation) but will bring forth good Hoppes, if it be put into the hands of an experienced workeman.

Of the situation.

Now, for the situation or site of your Hoppe-garden: you shall so neere as you can place it neare some cover or shelter, as either of hills, houses, high-walles, woods or trees, so those woods or trees bee not so neare that they may drop upon your Hoppe hils, for that will kill them: also the nearer it is planted to your dwelling house it is so much the beter, both because the vigilance of your dayre eye is a good guard thereunto, and also the labours of your worke-Master will bee more carefull and diligent. A Hoppe-garden as it delighteth much in the pleasantnesse of the sunne, so it cannot indure by any meanes, the sharpenesse of the windes, frosts, or Winter weather, and therefore your onely care is your defence and shelter. For the bignesse of your ground, it must be ordered according to your abilitie or place of trade for that commoditie, for if you shall have them but for your owne use, then a roode or two roodes will bee enough, albeit your house keeping maketh with

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with Nobilitie: but if you have them for a more particular profit, then you may take an Aker, two or three, according to your owne discretion; wherein you shall ever keepe these observations: that one mans labour cannot attend above two thousand five hundred hils, that every roode will beare two hundred and fiftie hils, every hill beare at least two pounds and an halfe of Hops (which is the just quantity that will serve to brew one quarter of Malt) and that every hundred waight of Hops, is at the least, in a reasonable yeare, worth foure nobles the hundred: so that every roode of ground thus imployed, cannot be lesse worth, at the meanest reckoning, then sixe pounds by the yeare: for if the ground be principall good for the purpose, and well ordered, the profit will bee much greater, in as much as the bells of the Hops will be much greater, full, and more waighty: And thus much for the ground and situation.

CHAP. XII.

Of the ordering of the Garden, and placing of the Hils.

AS soone as you have chosen out your plat-forme of ground, you shall either by ploughing, or digging, or by both, make it as flat and levell as is possible, unlesse it bee any thing subject unto water, and then you shall give it some small descent, and with little trenches convay the water from annoying it: you shall also the yeare before you either make hill or plant it with Hoppe-spoles, sowe it all over with hempe, which will not onely kill, and stifle all sorts of weeds, but also rot the greene earth, and make the mould mellow, and apt to receive the roots when they come to be planted.

Now, as soone as your ground is thus prepared, you shall then take a line, and with it measure your ground overthwart, and to every hill allow at least three foote of ground every way, and betwixt hill and hill, at the least sixe foote distance; and when you have marked thus the number of thirty or fourty places, where your hills shall be

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placed, intending ever that the time of yeare for this worke must be about the beginning of *April*; you shall then in the center, or mid part of those places made for the site of your hils, digge small square holes of a foote square each way, and a full foote deepe, and in those holes you shall set your Hop-roots, that is to say, in every hole at least three rootes, and these three rootes you shall joyne together in such wise that the tops of them may be of one equall height, and agreeing with the face or upper part of the earth, you shall set them straight and upright, and not separating them, as many doe, and setting at each corner of the hole a roote, neither shall you twist them, and set both ends upward, nor lay them flat or crosse-wise in the earth, neither shall you make the hils first and set the roots after, nor immediatly upon the setting cast great hils upon them, all which are very vild wayes for the setting of Hops; but, as before I said, having joyned your rootes together, you shall place them straight and upright, and so holding them in one hand, with the other put the moulds close, firme, and perfectly about them, especially to each corner of the hole, which done you shal likewise cover the sets themselves all over with fine moulds, at least two fingers thicke, and in this sort you shall plant all your garden plote over, making the sites for your hils to stand in rowes and ranks, in such order that you may have every way between the hils small alles and passages, wherein you may goe at pleasure from hill to hill, without any trouble or annoyance, according to that forme which I have before prescribed touching the planting of your Apple-trees in every severall quarter in your Orchard: and herein you are to understand, that in this first yeare of planting your Hop-garden, you shall by no meanes fashion or make any great hils, but onely raise that part of the earth where your plants are set, somewhat three fingers higher then the ordinary ground.

The choise of Rootes.

Now before I proceed any further, I thinke it not amisse to speake something touching the choise, gathering and trimming of Hop-roots: wherefore you shall understand, that about the latter end of *March* is the best gathering of Hop-

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Hop-roots, which so neare as you can you shall select out of some garden of good reputation, which is both carefully kept, and by a man of good knowledge, for there every thing being preserved in his best perfection, the roots will be the greatest and most apt to take: & in the choise of your roots you shall ever chuse those which are the greatest, as namely, such as are at the least 3. or 4. inches about, and ten inches long, let every root containe about 3. joynts, and no more, and in any case let them be the cyons of the last yeares growth, if they be perfectly good they have a great greene skinne with red streakes, and a hard, broad, long, green bell; if they be otherwise, as namely, wild Hops, then they are small and slender, like threds, their colour is all red, even when it is at least three yards high, whereas the best Hop carrieth his reddish colour not three foote from the earth. Now having gotten such roots as are good and fit for your purpose, if the season of the weather, or other necessitie hinder you from presently setting them, you shall then either lay them in some puddle, near to your garden, or else bury them in the ground, untill fit time for their plantings and of the two it is better to bury them then lay them in puddle, because if you so let them lie above 24. houres, the roots will be spoyled.

Now after you have in manner aforeshewed, planted your garden with roots, it shall not be amisse, if the place be apt to such annoyance, to pricke upon the site of every hill a few sharpe thornes to defend them from the scratching of poultry, or such like, which ever are busie to doe mischiefe: yet of all house-fowle Geese be the worst, but if your fence be as it ought, high, strong, and close, it will both prevent their harme and this labour.

Next unto this worke is the placing of Poles, of which wee will first speake of the choise thereof, wherein if I dissent from the opinion of other men, yet imagine I set downe no Oracle, but referre you to the experience of the practice, and so make your owne discretion the arbiter betweene our dissentions. It is the opinion of some, that Alder-poles are most proper and fit for the Hoppe-garden,

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both that the Hop taketh, as they say, a certaine naturall ioye to that wood, as also that the roughnesse of the rind is a stay and benefit to the growth of the Hop: to all which I doe not disagree, but that there should be found Alder-poles of that length, as namely, 16. or 18. foote long, nine or ten inches in compasse, and with all rush-growne, straight, and fit for this use, seemeth to me as much as a miracle, because in my life I have not beheld the like, neither doe I thinke our kingdome can afford it, unlesse in some such especiall place where they are purposely kept & maintained, more to shew the art of their maintenance, then the excellencie of their nature: in this one benefit, and double one where they are so preserved, the cost of their preservation amounteth to more then the goodnesse of their extraordinary qualitie, which mine Author defends to the contrary, giving them a larger prerogative, in that they are cheaper to the purse, more profitable to the plant, and lesse consumption to the commonwealth: but I greatly doubt in the approbation, and therefore mine advice is not to rely any thing upon the Alder, and for his preheminence imagine all other Poles insufficient: but be assured that either the Oake-pole, the Ash, the Beech, the Aspe, or Mople, are every way as good, as profitable, and by many degrees of much longer lasting.

Now, if it bee so that you happen to live in the champian Country, as for the most part *Northampton-shire*, *Oxford-shire*, some parts of *Lecester* and *Rutland* are, or in the wet and Low-countries, as *Holland*, and *Kesteven* in *Lincolne-shire*, or the Ile of *Elye* in *Cambridge-shire*, in all which places are very barren of wood, and yet excellent soyles to beare Hoppes, rather then to loose the commoditie of the Hoppe-garden I wish you to plant great store of Willowes, which will afford you poles as sufficient as any of the other what soever, onely they are not so long lasting, and yet with carefull and dry keeping, I have seene them last full out seven yeares, a time reasonably sufficient for any young wood, for such a use. Thus you see the curiosity is not very great of what wood soever your

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your poale bee, so it bee of young and cleane growth, unthrowne, (that is to say, biggest at the neather end) 18 foot in length, and 10 inches in compasse. These poales you shall cut and prepare betwixt the feast of *All-saints* and *Christmasse*, and so pile them up in some dry place where they may take no wet, until it be mid *April*; at which time (your hops being shot out of the ground at least three quarters of a yard, so that you may discerne the principall eyes, which issue from the principall rootes) you shall then bring your poales into the garden, and lay them along in the alleyes, by every hill so many poales as shall be sufficient for the mine branches, which haply the first yeare will not be above two or three poales at the most to a hill, but in processe of time more, as foure or five according to the prosperity of the plants, and the largenesse of the hills. After you have thus laid your poales, you shall then begin to set them up in manner following first, you shall take a gavelocke or crow of yron, and strike it into the earth so neare unto the roote of the hoppe as is possible, provided alwayes that you doe not bruise, or touch the roote, and so stroke after stroke, cease not striking till you have made a hoale at least two foote deepe, and make them in the same wise inward towards the hill, that the poales in their standing may shoote outwards, and hold their greatest distance in the toppes: this done, you shall place the poales in those hoales thus made with the yron crow, and with another piece of wood, made rammer-wise, that is to say, as bigge at the neather end as the biggest part of the poale, or somewhat more, you shall ramme in the poales, and beate the earth close and hard about them, alwayes provided, that you touch not any branch, or as little as you may, beate with your rammer within betweene the poales, onely on the out-side make them so fast, that the winde, or weather, may not disorder or blow them downe: then lay to the bottome of every poale, the branch that shall ascend it, and you shall see in a short space, how out of their owne natures, they will imbrace and climbe about them.

The proportion of the Poale.

Of cutting and erecting Poales.

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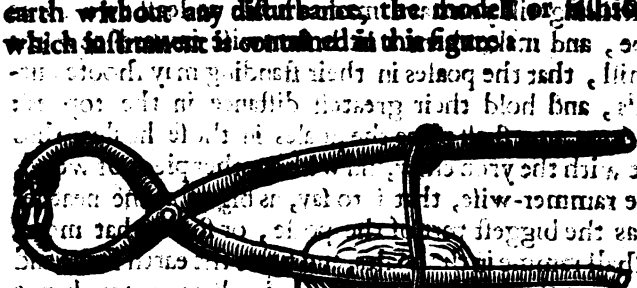
Now, if it happen after your Hops are growne up, yet not come to their full perfection, that any of your poales chance to break, you shall then take a new poale, and with some soft greene rushes, or the inmost greene barke of an Alder-tree, tye the top of the Hop to the the top of the new poale, then draw the broken poale out of the Hop, (I meane that part which being broken lyeth upon the ground) and as you saw it did wind about the old poale (which is ever the same way that the Sun runs) so you shall wind it about the new poale: then loosening the earth a little from the neather part of the broken poale, you may with your owne strength pull it cleane out of the earth, and place the new poale in her roome. Now if there be some which are exceeding curious in pulling up these old poales, and rather then they will shake the earth, or loosen the mould, they will make a paire of large pinsers, or carriers of yron, at least five foote long, with sharpe teeth, and a clasping hooke to hold the teeth together, when they have taken fast hold upon the poale so neere the earth as is possible, and then laying a piece of wood under the carriers, and poysing downe the other ende, to reape the poale out of the earth without any disturbance, the modell or fashion of which instrument is contained in this figure.



This instrument is not to be discommended, but to be held of good use, either in binding grounds where the earth hardeneth and holdeth the poale more then fit, or in the strength

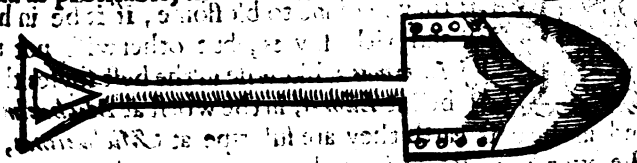
and

and heate of Summer, when the dryneſſe of the mould will by no meanes ſuffer the poale to part from it: but otherwiſe it is needleſſe and may without danger be omitted.

A ſoone as you have ſufficiently ſet every hill with poales, and that there is no diſorder in your worke, you ſhall when the Hops begin to climbe, note if there be any cyons or branches which doe forſake the poales, and rather ſhoot along ſt the ground, then looke up to their ſupporters, and all ſuch as you ſhall ſo find, you ſhall as before I ſayd, either with ſoft greene ruſhes, or the greene barke of Elder, tye them gently unto the poales, & wind them about, in the ſame courſe that the Sun goes, as oft as conveniently you can: and this you ſhall do ever after the dew is gone from the ground, and not before, and this muſt be done with all poſſible ſpeed, for that cyon which is the longeſt before it take unto the poale is ever the worſt and brings forth his fruit in the worſt ſeaſon.

Now as touching the making of your hils, you ſhall underſtand that although generally they are not made the firſt yeare, yet it is not amiſſe if you come that ſcruple, and begin to make your hils as ſoone as you have placed your poales, for if your induſtry be anſwerable to the deſert of the labor, you ſhall reape as good profit the firſt yeare, as either the ſecond or the third. To begin therefore to make your hils, you ſhall make you an inſtrument like a ſtubbing Hoe, which is a toole wherewith laborers ſtub roots out of decai'd woodland grounds, only this ſhall be ſomewhat broader and thinner, ſomewhat in faſhion (though twice ſo big) unto a Coopers Adz, with a ſhaft at leaſt 4 foot long: ſome only for this purpoſe uſe a fine paring Spade, which is every way as good, and as profitable, the faſhion of which is in this figure;

Of the Hils.



With this paring Spade, or Hoe, you ſhall pare up the greene ſwarth and uppermoſt earth, which is in the alleyes

leyes between the hils, and lay it unto the roote of the Hope, raising them up like small Mole-hils, and so monthly increasing them, all the yeare through, make them as large as the site of your ground will suffer, which is at least foure or five foote overthwart in the bottoms, and so high as conveniently that height will carry: you shall not by any meanes this first yeare decay any cyons or branches which spring from the hils, but maintaine them in their growth, and suffer them to climbe up the poales, but after the first yeere is expired you shall not suffer above two or three cyons of the most, to rise upon one poale. After your hills are made, which as before I sayd would be at least foure or five foote square in the bottome, and three foote high, you shall then diligently every day attend your garden, and if you finde any branches that being risen more then halfe way up the poales, doe then forsake them and spread outward, dangling down, then you shall either with the helpe of a high stoole, on which standing, you may reach the top of the poale, or else with a small forckt sticke, put up the branch, and wind it about the poale: you shall also be carefull that no weeds or other filthinesse grow about the roots of your Hope to choak them, but upon the first discovery to destroy them.

CHAP. XIII.

Of the gathering of Hoppes, and the preserving of the Poales.

TOuching the gathering of Hops you shall understand that after Saint *Margarets* day they beginne to blossome, if it be in hot and rich soyles, but otherwise not till *Lammas*: likewise in the best soyles they bell at *Lammas*, in the worst at *Michaelmas*, and in the best earth they are full ripe at *Michaelmas*, in the worst at *Martilmas*; but to know when they are ripe indeede, you shall perceive the seed to loose his greene colour

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colour, and looke as browne as a Hares backe, wherfore then you shall with all diligence gather them, and because they are a fruit that will endure little or no delay, as being ready to fall as soone as they be ripe, and because the exchange of weather may breed change in your work, you shall upon the first advantage of faire weather, even so soone as you shall see the dew exhaled and drawne from the earth, get all the ayd of men, women and children which have any understanding, to help you; and then having some convenient empty barne, or shedde, made either of boards or Canvasse, neare to the garden, in which you shall pull your Hoppes, you shall then beginne at the neareſt part of the garden, and with a sharpe garden knife cut the stalkes of the Hoppes asunder close by the toppes of the hils; and then with a strait forke of yron, made broad and sharpe, for the purpose, shove up all the Hoppes, and leave the poales naked. Then having labouring persons for the purpose, let them carry them into the place where they are to be pild; and in any case cut no more then presently is carryed away as fast as they are cut, lest if a shewer of raine should happen to fall, and those being cut and taking wet, are in danger of spoyling. You shall provide that those which pull your Hops be persons of good discretion, who must not pull them one by one, but stripe them roundly through their hands into baskets, mixing the young buddes and small leaves with them, which are as good as any part of the Hoppe whatsoever. After you have pulled all your Hoppes and carried them into such convenient dry roomes as you have prepared for that purpose, you shall then spread them upon cleane floores, so thinne as may be, that the ayre may passe thorow them, lest lying in heapes they sweate, and so mould, before you can have leasure to dry them. After your Hoppes are thus ordered, you shall then cleanse your garden of all such Hoppe-straw, and other trash, as in the gathering was scattered therein: then shall you plucke up all your Hoppe-poales, in manner before shewed, and having either some dry boarded house, or shed, made for the

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purpose, pile them one upon another, safe from winde or weather, which howsoever some that would have their experience, like a Collossus, seeme greater then it is, doe disallow, yet it is the best manner of keeping of poales, and well worthy the charge: but for want of such a house, it shall not be amisse to take first your Hoppe-straw, and lay it a good thicknesse upon the ground, and with sixe strong stakes, driven slant-wise into the earth, so as the uppermost ends may be inward one to another, lay then your Hoppe-poales betweene the stakes, and pile them one upon another, drawing them narrower and narrower to the top, and then cover them all over with more Hoppe-straw, and so let them rest till the next *March*, at which time you shall have new occasion to use them.

Winter businesse.

As soone as you have piled up your Hoppe-poales, dry and close, then you shall about mid *November* following thatch downe your hils, and lay all your rootes bare, that the sharpnesse of the season may nip them, and keepe them from springing too early: you shall also then bring into the garden old Cow-dung, which is at least two yeares old, for no new dung is good, and this you shall lay in some great heape, in some convenient place of the garden untill *April*, at which time, after you have wound your Hoppes about your poales, you shall then bestow upon every hill twoor three Spades-full of the Manure mixt with earth, which will comfort the plant and make it spring pleasantly.

After your hills are puld downe, you shall with your garden Spade, or your Hoe, undermine all the earth round about the roote of the Hoppe, till you come to the principall rootes thereof, and then taking the youngest rootes in your hand, and shaking away the earth, you shall see how the new rootes grow from the old sets, then with a sharpe knife cut away all those rootes as did spring the yeare before, out of your sets, within an inch and a halfe of the same, but every yeare after the first you shall cut them close by the old rootes. Now, if you see any rootes which doe grow

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grow ſtraight downeward, without joynts, thoſe you ſhall not cut at all, for they are great nouriſhers of the plant, but if they grow outward or ſide-wayes, they are of contrary natures, and muſt neceſſarily bee cut away. If any of your Hoppes turne wilde, as oft it happens, which you ſhall know by the perfect redneſſe of the branch, then you ſhall cut it quite up, and plant a new roote in his place. After you have cut and trimmed all your rootes, then you ſhall cover them againe, in ſuch ſort as you were taught at the firſt planting them, and ſo let them abide till their due time for poling.

CHAP. XIIII.

Of drying, and not drying of Hoppes, and of packing them when they are dryed.

ALthough there bee much curioſitie in the drying of Hoppes as well in the temperature of heate (which having any extremitie, as either of heate, or his contrary, breedeth diſorder in the worke) as alſo in the framing of the oſt or furnace after many new moulds and faſhions, as variable as mens wits and experiences, yet becauſe innovations and incertaintie doe rather perplexe then profit, I will ſhunne, as much as in mee lyeth, from loading the memory of the ſtudious Husbandman with thoſe Stratagems which diſable his underſtanding from the attaining of better perfection, not diſallowing any mans approved knowledge, or thinking, that becauſe ſuch a man can mend ſmoaking Chimnyes, therefore none but hee ſhall have licenſe to make Chimnyes, or that becauſe ſome men can melt Mettall without winde, therefore it ſhall be utterly unlawfull to uſe bellowes: theſe violent opinions I altogether diſacknowledge, and wiſh every one the liberty of his owne thoughts, and for my Engliſh Husbandy I will ſhew him that way

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to dry his Hops which is most fit for his profit, ease, ease, and without extraordinarie expences.

First, then to speake of the time which is fittest for the drying of your Hoppes, it is immediately as soone as they are gotten, if more vrgent occasions doe not delay the busines, which if they happen, then you have a course before prescribed how to preserve them from mouldinesse and putrifaction till you can compasse fit time to effect the work in. The manner of drying them is upon a Kilne, of which there be two sorts, that is to say, an English Kilne; and a French Kilne: the English Kilne being composed of wood, lath, and clay, and therefore subject to some danger of fire, the French, of bricke, lime, and sand, and therefore safe, close, and without all perill, and to be preferred much before the other; yet because I have hereafter more occasion to speake of the nature, fashion, and edifice of Kilnes in that part of this Volume where I intreate of Malting, I will cease further to mention them, then to say that upon a Kilne is the best drying your Hoppes, after this manner, having finely bedded your Kilne with Wheate-straw, you shall lay on your hayre cloath, although some disallow it, but give no reason therefore, yet it cannot bee hurtfull in any degree, for it neither distasteth the Hoppes, nor defendeth them from the fire, making the worke longer then it would, but it preserveth both the Hoppes from filthinesse, and their seede from losse: when your hayre cloath is spread, you shall cause one to deliver you up your Hoppes in baskets, which you shall spread upon the cloath, all over the Kilne, at the least eight inches thicke, and then comming downe, and going to the hoale of the Kilne, you shall with a little dry straw kindle the fire, and then maintaining it with more straw, you shall keepe a fire a little more fervent then for the drying of a kilne full of Malt, being assured that the same quantitie of fuell, heate, and time, which dryeth a kilne-full of Malt, will also dry a kilne-full of Hoppes, and if your Kilne will dry twenty strikes, or bushells of Malt at one drying, then it will dry forty of

Hops,

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Hoppes, because being laid much thicker the quantitie can be no lesse then doubled, which is speed all together sufficient, and may very well serue to dry more Hoppes then any one man hath growing in a thinking time.

Now for as much as some men do not allow to dry Hoppes with straw, but rather preferre wood, and of wood still to chuse the greenest, yet I am of a contrary opinion, for I know by experience that the smoake which proceedeth from wood (especially if it bee greene wood) being a strong and sharpe vapour, doth so taint and infect the Hoppes, that when those Hoppes come to be brewed with, they give the drinke a smokie taste, even as if the Malt it selfe had beene wood-dryed: the ample proofe whereof I leave to the iudgement of them that haue trauelled in *Yorke-shire*, where for the most part is nothing but wood-dryed Malt onely.

That you may know when your Hoppes are dry enough, you shall take a small long sticke, and stirring the Hops too and fro with it, if the Hoppes doe rustle and make a light noyse, each as it were separating one from another, then they are altogether dry enough, but if in any part you find them heauie or clewing one to another, then they haue not enough of the fire: also when they are sufficiently and moderately dryed they are of a bright-browne colour, little or nothing altered from that they held when they were upon the stalke, but if they be ouer dryed, then their colour will be red: and if they were not well ordered before they were dryed, but suffered either to take wet of mould, then they will looke blacke when they are dry.

Of the drying Hoppes.

There be some which are of opinion, that if you doe not dry your hoppes at all, it shall be no losse, but it is an error most grosse, for if they be not dryed, there is neither profit in their vse, nor safety in preserving them.

As soone as your hoppes are sufficiently dryed, you shall by the plucking up of the foure corners of your cloth shut all your hoppes together, and then putting them into some dry place as you

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have prepared of purpose to lay them in, as namely, either in dry-fats, or in garners, made either of plaster, or boards: and herein you shall observe to packe them close and hard together, which will be a meanes that if any of them bee not dry, yet the heate they shall get by such lying will dry them fully and make them fit for service.

Of packing Hoppes.

Now to conclude, if your store of Hoppes bee so great that you shall trade or make Merchandise of them, then either to convay them by land or Sea, it is best that you packe them into great bagges of canvas, made in fashion of those bagges which wooll-men use, and call them pockets, but not being altogether so large: these bags you shall open, and either hang up betweene some crosse beames, or else let down into some lower floore, and then putting in your Hops cause a man to goe into the bagge and tread downe the Hops, so hard as is possible, prossing downe basket-full after basket-full, till the bagge bee filled, even unto the top, and then with an extraordinary pack-thrid, sowing the open end of the bag close together, let every hollow place bee crammed with Hops, whilst you can get one hand-full to goe in, and so having made every corner strong and fast, let them lye dry till you have occasion either to ship or cart them. And thus much for the ordering of Hoppes and their uses.

CHAP. XV.

The office of the Gardiner, and first of the Earth, Situation, and fencing of a Garden for pleasure.

THere is to be required at the hands of every perfect Gardiner three especiall vertues, that is to say, *Diligence*, *Industry*, and *Art*: the two first, as namely, *Diligence* (under which word I comprehend his love, care, and delight in the vertue he professeth) and *Industry* (under which word I conclude his labour, paine, and study, which are the onely estimate

of

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of his perfection) he must reape from Nature: for, if he be not inclined, even from the strength of his blood to this love and labour, it is impossible he should ever prove an absolute Gardiner: the latter, which consisteth his skill, habit, and understanding in what he professeth, I doubt not but he shall gather from the abstracts or rules which shall follow hereafter in this Treatise, so that, where nature, and this worke shall concurre in one subject, there is no doubt to be made, but the professor shall in all points, bee able to discharge a sufficient dutie.

Now, for as much as all our ancient and forraine writers (for wee are very sleightly beholding to our selves for these indeavours) are exceeding curious in the choise of earth, and situation of the plot of ground which is meete for the garden: yet I, that am all English Husbandman, and know our soyles out of the worthinesse of their owne natures, doeme it were rebell against forraine injunction, thinking their owne vertues are able to propound their owne rules: and the rather when I call into my remembrance, that in all the forraine places I have seene, there is none more worthy then our owne, and yet none ordered like our owne, I cannot be induced to follow the rules of *Italy*, unlesse I were in *Italy*, neither those of *France*, unlesse I dwelt in *France*, nor those of *Germany*, except in *Germany* I had my habitation, knowing that the too much heate of the one, or the too much coldnesse of the other, must either confound them, being in our temperate climate: whence it comes, that our English booke-knowledge in this kinde is both disgraced and condemned: every one labouring in these ornaments, because he is guided by rules heard, being strange, as if to read the English tongue there were none better then an Italian Pedant. That to avoid, I will neither forge, nor counterfeit from strangers, but set downe them as worthies and fathers of this our Commonwealth.

To speake therefore first of the ground which is fittest for the Garden, where the best is hard to finde, the labour least, and the profit most certaine, yet it is not meete that you refuse

Of the ground.

refuse any earth whatsoever, both because a garden is so profitable, necessary, and such an ornament and grace to every house and house-keeper, that the dwelling place is lame and maimed if it want that goodly limbe, and beauty. Besies, if no gardens should bee planted but in the best and richest soyles, it were infinite the losse wee should sustaine in our private profit, and in the due commendations, fit for many worthy workemen, who have reduced the worst and barrennest earthes to as rare perfection and profit as if they had beene the onely soyles of this kingdome: and for mine owne part, I doe not wonder either at the worke of Art, or Nature, when I behold in a goodly, rich and fertill soyle, a Garden adorned with all the delights and delicacies which are within mans understanding; because the naturall goodnesse of the earth (which not enduring to bee idle) will bring forth whatsoever is cast into her: but when I behold upon a barren, dry, and dejected earth, such as the Peake-hils, where a man may behold snow all Summer, or on the East-moore, whose best hearbage is nothing but mosse, and iron stone, in such a place, I say, to behold a delicate, rich, and fruitfull Garden, it shewes great worthinesse in the owner, and infinite art and industry in the workeman, and makes him both admire and love the begetter of such excellencies.

But sometimes to my purpose touching the choise of your earth for a Garden, such no house can conveniently bee without one; and that our English Nation is of that great hospitality, that not the worst place thereof but is abundantly inhabited, I thinke it meete that you refuse no earth whatsoever to plant your Garden upon, ever observing this rule; that the more barren it is, the more cost must be bestowed upon it, both in manuring, digging, and in trenching, as shall bee shewed hereafter, and the more rich it is, the lesse cost of such labours, and more curiosity in weeding, preyning, and trimming the earth: for, as the first is too slow, so the latter is too swift, both in her increase and multiplication.

Now

Now, for the knowledge of soyles, which is good, and which is bad, I have spoken sufficiently already in that part, which intreateth of Tillage, onely this one caveat I will give you, as soone as you have marke out your garden-plot, you shall turne up a sod, and taking some part of the fresh mould, champe it betweene your teeth in your mouth, and if it taste sweetish then is the mould excellent good and fit to receive either seeds or plants, without much manuring, but if it taste salt or bitter, then it is a great signe of barrennesse, and must of necessitie be corrected with Manure: for saltnesse shrewdly much windnesse, which choaketh and stifleth the seede, and bitternesse that unnaturall heate which blasteth it before it sprout.

Now, for the situation of the Garden-plot for pleasure, you shall understand that it must ever bee placed so neare unto the dwelling house as is possible, both because the eye of the owner may bee a guard and support from inconveniences, as also that the speciall roomes and prospects of the house may bee adorned, perfumed, and inriched, with the delicate proportions, odoriferous smels, and wholsome ayres which shall ascend and vaporate from the same, as may more amply bee seene in that former Chapter, where modelling forth the Husbandmans house, I shew you the site and place for his Garden, onely you must diligently observe that neare unto this Garden dot not stand any hovells, stackes of hay, or Corne, which over-peering the walls or fence of the same, may by reason of winde, or other occasion, annoy the same with straw, chaffe, seeds, or such like filthinesse, which doth not only blemish the beauty thereof, but is also naturally very hurtfull and cankerous, to all plants whatsoever. Within this Garden-plot would bee also either some Well, Pumpe, Conduit, Pond, or Cesterne for water, for such a Garden, at many times of the yeare, requireth much watering: and this place for water you shall order and dispose according to your ability, and the nature of the soyle, as thus: if both your reputation, and your wealth bee of the lowest account, if then your garden

Of the situation.

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afford you a plaine Well, comely covered, or a plaine Pumpe, it shall be sufficient, or if for want of such springs you digge a faire Pond in some convenient part thereof, or else (which is much better) erect a Cisterne of leade, into which by pipes may descend all the raine-water which falls about any part of the house, it will serve for your purpose: but if God have bestowed upon you a greater measure of his blessings, both in wealth and account, if then instead of either Well, Pumpe, Pond, or Cisterne, you erect Conduits, or continuall running Fountaines, composed of Antique workes, according to the curiositie of mans invention, it shall bee more gallant and worthy: and these Conduits or water-courses, you may bring in Pipes of leade from other remote or more necessary places of water springs, standing above the levell of your Garden, as every Artist in the profession of such workes can more amply declare unto you, onely for mee let it bee sufficient to let you understand that every Garden would bee accompanied with water.

Also you shall have great care that there adjoyne not unto your Garden-plot any common-shewers, stinking or muddy dikes, dung-hils, or such like, the annoyance of whose smels and evill vapours doth not onely corrupt and breede infection in man, but also cankereth, killeth and consumeth all manner of plants, especially those which are most pleasant, fragrant, and odoriferous, as being of tenderest nature and qualitie: and for this cause divers will not allow the moting of garden-plots about, imagining that the over great moistnesse thereof, and the strong smels which doe arise from the mud in the Summer season, doe corrupt and putrifie the herbes and plants within the compasse of the same; but I am not altogether of that opinion, for if the water be sweet, or the channell thereof sandy or gravelly, then there is no such scruple to be taken: but if it be contrary, then it is with all care to bee avoyded, because it is ever a Maxime in this case, that your Garden-plot must ever bee compassed with the pleasantest and sweetest ayre that may be.

The

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The windes which you ſhall generally defend from your Garden, are the Eaſterne windes and the Northerne, becauſe they are ſharpeſt, coldeſt, and bring with them tempers of moſt unſeaſonableneſſe, and albeit in *Italy*, *Spaine*, and ſuch like hot Countreyes, they rather defend away the Weſterne and Southerne winde, giving free paſſage to the Eaſt and North, yet with *England* it may not be ſo, becauſe the naturall coldneſſe of our climate is ſufficient without any aſſiſtance to further bitterneſſe, our beſt induſtry being to bee imployed rather to get warmth, which may nouriſh and bring forth our labours, then any way to diminiſh or weaken the ſame.

This plot of ground alſo would lye, as neare as you can, at the foote or bottome of an hill, both that the hill may defend the windes and ſharpe weather from the ſame, as alſo that you may have certaine aſcents or riſings of ſtate, from levell to levell, as was in ſome ſort before ſhewed in the plot for the Orchard, and ſhall be better declared in the next Chapter.

Now laſtly for the fencing or making private the garden-plot, it is to be done according to your abilitie, and the nature of the climate wherein you live: as thus, if your revenewes will reach thereunto, and matter bee to bee got for that purpoſe where you live, then you ſhall underſtand that your beſt fence is a ſtrong wall, either of Bricke, Aſhler, Rough-ſtone, or Earth, of which you are the beſt-owner, or can with leaſt damnage compaſſe: but for want either of earth to make bricke, or quarries out of which to get ſtone, it ſhall not then be amiſſe to fence your garden with a tall ſtrong pale of ſeaſoned Oake, fixt to a double parris raile, being lined on the inſide with a thicke quick-ſet of White-thorne, the planting whereof ſhall be more largely ſpoken of where I intreate of ſencing onely. But if the place where you live in, be ſo barraine of timber that you cannot get ſufficient for the purpoſe, then you ſhall make a ſtudde wall, which ſhall be ſplinted, and

Of fencing the garden.

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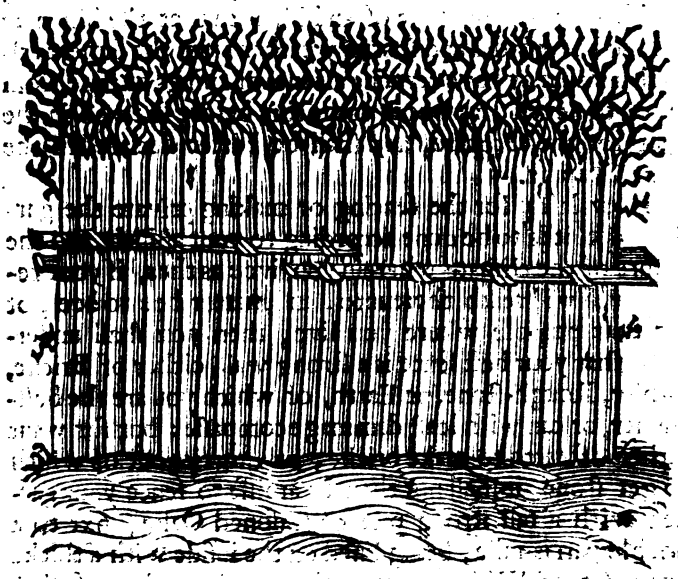
and lomed both with earth and lime, and hair, and copt upon the toppe (to defend away the) either with tile, slate, or straw, and this wall is both beautifull, and of long continuance, as may be seene in the most parts of the South of this kingdome: but if either your poverty or climate doe deny you timber for this purpose, you shall then first make a small trench round about your Garden-plot, and set at least foure rowes of quicke-set of white-Thorne, one above another, and then round about the out-side, to defend the quicke-set, make a tall fence of dead wood, being either long, small, bushy poles pricke into the earth, and standing upright, and so bound together in the walle betweene two other poles, according to the figure set downe



being so high that not any kind of Pullen may flie over the same, or else an ordinary hedge of common wood, being beirded upon the top with sharpe Thornes, in such wise that not any thing may dare to adventure over it: and this

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this dead fence you shall repaire and maintaine as occasion shall require from time to time, till your quick set bee growne up, and by continuall plashing and interfouldings, be made able and sufficient to fence and defence your garden, which will be within five or seaven yeares at the most, and so continue with good order for ever. And thus much for the situation of gardens.

CHAP. XVI.

Of the fashion of the garden-plot for pleasure, the Alleyes, Quarters, Digging and Dunging of the same.

AFter you have chosen out and fenced your garden-plot, according as is before said, you shall then begin to fashion and proportion out the same, sith in the conveyance remaineth a great part of the gardiners Art. And herein you shall understand that there be two formes of proportions belonging to the garden, the first, onely beautifull, as the plaine, and single square, containing onely foure quarters, with his large Alleyes every way, as was described before in the Orchard; the other both beautifull and stately, as when there is one, two or three levelled squares, each mounting seaven or eight steppes one above another, and every square containing foure severall Quarters with their distinct and severall Alleyes of equall breadth and proportion placing in the center of every square, that is to say, where the foure corners of the foure quarters doe as it were neighbour and meet one another, either a Conduit of anticke fashion, a Standard of some unusuall devise, or else some Dyall, or other Pyramid, that may grace and beautifie the garden. And herein I would have you understand that I would not have you to cast every square into one forme or fashion of Quarters or Alleyes, for that would shew little variety The fashion.

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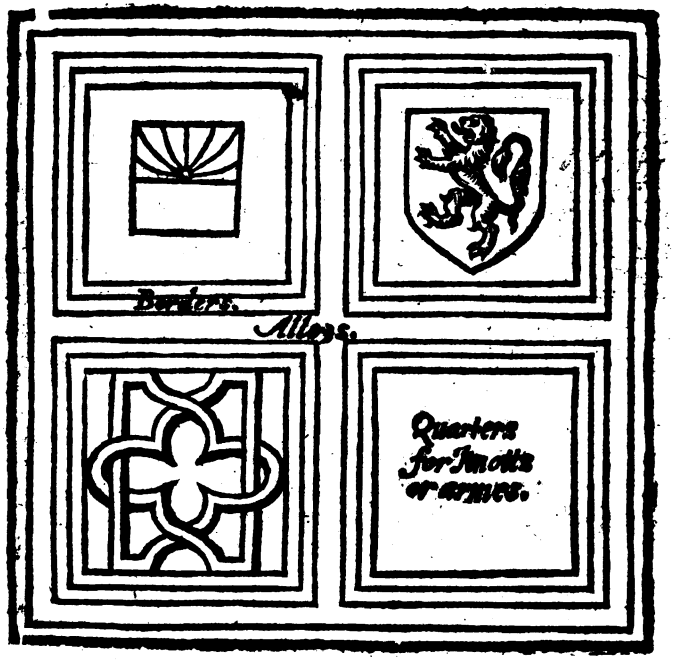
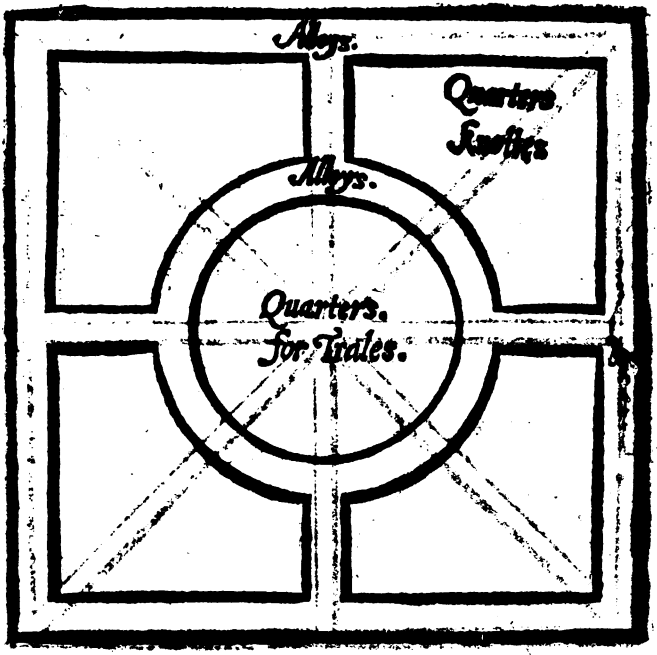
or invention in Art, but rather to cast one in plaine Squares, another in Triangulars, another in Roundalls, and so a fourth according to the worthinesse of conceite, as in some sort you may behold by these figures, which questionlesse when they are adorned with their ornaments, will breede infinite delight to the beholders.

The Plaine Square.



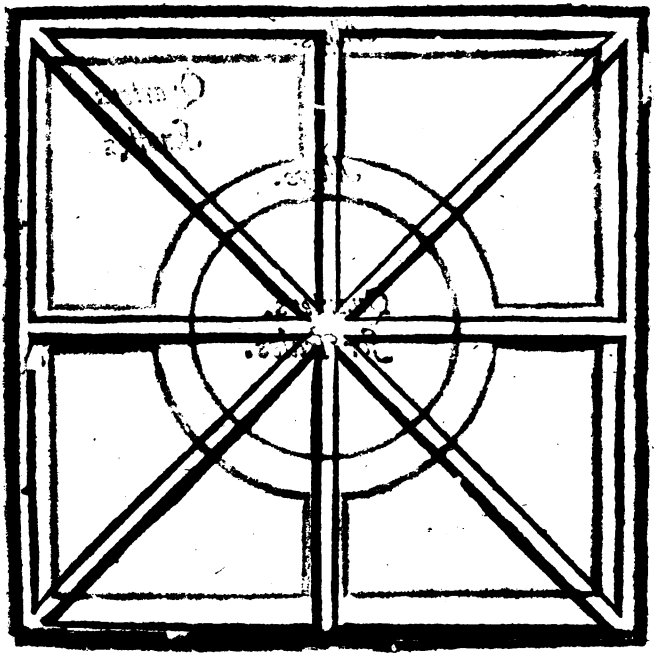
The

The Square Triangular or Circular.



The

The Square of eight Diamonds.



From

From the modell of these Squares, Triangles, and Rounds, any industrious braine may with little difficulty derive and fashion to himselfe divers other shapes and proportions, according to the nature and site of the earth, which may appeare more quaint and strange then these which are in our common use, albeit these are in the truth of workemanship the perfect father and mother of all proportions whatsoever.

Now, you shall understand that concerning the Alleyes and walkes in this Garden of pleasure, it is very meete that your ground, being spacious and large (which is the best beauty) that you cut through the midst of every Alley an ample and large path or walke, the full depth of the roote of the greene-swarth, and at least the breadth of seven or eight foote: and in this path you shall strow either some fine redde-sand, of a good binding nature, or else some fine small gravell, or for want of both them you may take the finest of your pit-coale-dust, which will both keepe your Alleyes dry and smooth, and also not suffer any grasse or greene thing to grow within them, which is disgracefull, if it be suffered: the French-men doe use to cover their Allies, either with the powder of marble, or the powder of slate-stone, or else pave them either with Pit-stone, Free-stone, or Tiles, the first of which is too hard to get, the other great cost to small purpose, the rather sith our owne gravell is in every respect as beautifull, as dry, as strong, and as long lasting: Onely this heedfulnesse you must diligently observe, that if the situation of your Garden-plot bee low and much subject to moisture, that then these middle-cut pathes or walkes must bee heightned up in the midst, and made in a proportionall bent or compasse: wherein you shall observe that the out most verges of the walke must bee levell with the greene-swarth which holded in each side, and the midst so truely raised up in compasse, that the raine which falles may have a passage to each side of the greene-swarth. Now, the lesse this compasse is made, (so it avoyd the water, and remaine hard) the better it is, be-

The ordering of Alleyes.

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cause by that meanes both the eye shall be deceived (which shewes art in the workeman) and the more levell they are, the more ease unto them which shall continually walke upon them.

Objection. Now, if any shall object, why I doe not rather covet to have these Alleyes or walkes rather all greene, then thus cut and devided, sith it is a most beautifull thing to see a pleasant greene walke, my answer is this, that first the mixture of colours, is the onely delight of the eye above all other: for beauty being the onely object in which it joyeth, that beauty is nothing but an excellent mixture, or consent of colours, as in the composition of a delicate woman the grace of her cheeke is the mixture of red and white, the wonder of her eye blacke and white, and the beauty of her hand blew and white, any of which is not said to be beautifull if it consist of single or simple colours: and so in these walkes or Alleyes, the all greene, nor the all yellow cannot be said to bee most beautifull, but the greene and yellow, (that is to say the natroade grasse, and the well knit gravell) being equally mixt, give the eye both luster and delight beyond all comparison.

Againe, to keepe your walkes all greene, or grassy, you must of force either forbeare to tread upon them (which is the use for which they were onely fashioned) or treading upon them you shall make so many pathes and ill favored wayes as will be most ugly to the eye: besides the dew and wet hanging upon the grasse will so annoy you, that if you doe not select especiall houres to walke in, you must provide shooes or boots of extraordinary goodnesse: which is halfe a deprivement of your liberty, whereas these things of recreation were created for a contrary purpose.

Now, you shall also understand that as you make this sandy and smooth walke through the midst of your Allies, so you shall not omit but leave as much greene-swarth, or grasse ground of each side the plaine path as may fully countervaile the breadth of the walke, as thus for example: if your sandy walke bee sixe foote broad, the grasse ground

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ground of each ſide it, ſhall be at leaſt ſixe foote alſo, ſo that the whole Alley ſhall be at leaſt eighteene foote in breadth, which will be both comely and ſtately.

Your Alleyes being thus proportioned and ſet forth, your next worke ſhall be the ordering of your Quarters, which as I ſayd before, you may frame into what proportions you pleaſe, as into Squares, Triangles, and Rounds, acording to the ground, or your owne invention: and having marked them out with lines, and the Garden compaſſe, you ſhall then beginne to digge them in this manner: firſt, with a paring Spade, the faſhion whereof is formerly ſhewed, you ſhall pare away all the greene-ſwarth, fully ſo deepe as the roote of the graſſe ſhall goe, and caſt it away, then with other digging Spades you ſhall digge up the earth, at leaſt two foote and a halfe, or three foote deepe in turning up of which earth, you ſhall note that as any rootes of weedes, or other quickes ſhall bee raiſed or ſtirred up, ſo preſently with your hands to gather them up, and caſt them away, that your mould may (as neare as your diligence can performe it) bee cleane from either wilde roots, ſtones, or ſuch like offences: and in this digging of your Quarters you ſhall not forget, but raiſe up the ground of your Quarters at leaſt two foote higher then your Alleyes, and where by meanes of ſuch raiſure, you ſhall want mould, there you ſhall ſupply that lacke by bringing mould or cleane earth from ſome other place, where moſt conveniently you may ſpare it, that your whole Quarter being digged all over, it may riſe in all parts alike, and carry an orderly and well proportioned levell through the whole worke. Of the Quarters.

The beſt ſeaſon for this firſt digging of your Garden mould is in *September*: and after it is ſo digged and roughly caſt up, you ſhall let it reſt till the latter end of *November*, at what time you ſhall digge it up againe, in manner as aforeſaid, onely with theſe additions, that you ſhall enter into the freſh mould, halfe a Spade-graft deeper then before, and at every two foote breadth of ground, en- Of Dunging.

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larging the trench both wide and deepe, fill it up with the oldeſt and beſt Oxe or Cow-Manure that you can poſsibly get, till ſuch time that increaſing from two foote to two foote, you have gone over and Manured all your quarters, having a principall care that your Dung or Manure lye both deepe and thicke, in ſo much that every part of your mould may indifferently partake and bee inriched with the ſame Manure.

Diverſitie of Manures.

Now, you ſhall underſtand that although I doe particularly ſpeake but of Oxe or Cow Manure, becauſe it is of all the fatteſt and ſtrongeſt, eſpecially being old, yet their are divers reſpects to bee had in the Manuring of Gardens: as firſt, if your ground bee naturally of a good fat blacke, and well tempered earth, or if it bee of a barren, ſandy, hot, yet firme mould, that in either of theſe caſes your Oxe, Cow, or beaſt Manure is the beſt and moſt ſufficient, but if it be of a cold, barren, or ſpewing mould, then it ſhall be good to mixe your Oxe-dung with Horſe-dung, which ſhall bee at leaſt two yeares olde if you can get it, otherwiſe ſuch as you can compaſſe: if your ground be good and fertil, yet out of his drines in the ſummer time it be given to rive and chap as is ſeene in many earthes, you ſhall then mixe your Oxe-dung well with aſhes, orts of Lime, and ſuch like: laſtly, if your earth bee too much binding and cold therewithall, then mixe your Oxe-dung with chalke or Marle, and it is the beſt Manure. And thus much for the generall uſe of earthes.

Now, for particular uſes you ſhall underſtand, that for Hearbs or Flowers, the Oxe and Horſe-dung are the beſt, for rootes or Cabbages, mans ordure is the beſt, for Hartychockes, or any ſuch like thiſtly fruit, Swines-dung is moſt ſufficient, and thus according to your ſetled determination you ſhall ſeverally provide for every ſeverall purpoſe, and ſo, God aſſiſting, ſeldome faile in your profit. And this dunge you ſhall bring into your Garden in little drumblars or wheele-barrowes, made for the purpoſe, ſuch as being in common uſe in every Husbandmans yard it ſhall

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shall be needlesse here either to shew the figure or proportion thereof. And thus much for the fashion, of digging and dunging of gardens.

CHAP. XVII.

Of the adornation and beautifying of the Garden for pleasure.

THE adornation and beautifying of gardens is not onely divers, but almost infinite, the industry of mens braines hourely begetting and bringing forth such new garments and imbroydery for the earth, that it is impossible to say, this shall be singular, neither can any man say, that this or that is the best, sith as mens tastes so their fancies are carried away with the varietie of their affections, some being pleased with one forme, some with another: I will not therefore give preheminence to any one beauty, but describing the faces and glories of all the best ornaments generally or particularly used in our English gardens, referre every man to the election of that which shall best agree with his fancie.

To beginne therefore with that which is most ancient and at this day of most use amongst the vulgar though least respected with great ones, who for the most part are wholly given over to novelties: you shall understand that Knots and Mazes were the first that were received into admiration, which Knots or Mazes were placed upon the faces of each severall quarter, in this sort: first, about the verge or square of the quarter was set a border of Primpe, Boxe, Lavandar, Rose-mary, or such like, but Primpe or Boxe is the best, and it was set thicke, at least eighteene inches broad at the bottome, and kept with clip- Of Knots and Mazes.

+ Primpe, - privet.

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clipping both ſmooth and levell on the toppe and on each ſide; thoſe borders as they were ornaments, ſo were they alſo very profitable to the Huswife for the drying of linnen clothes, yarne, and ſuch like: for the nature of Boxe and Primpe being to grow like a hedge, ſtrong and thicke together, the Gardiner with his ſheares, may keepe it as broad and plaine as himſelfe liſteth. Within this border ſhall your knot or maze bee drawne, it being ever intended that before the ſetting of your border your quarter ſhall bee the third time digged, made exceeding levell, and ſmooth, without clot or ſtone, and the Mould with your Garden Rake of Iron, ſo broken that it may lye like the fineſt aſhes, and then with your Garden Mauls, which are broad boards of more then two foote ſquare ſet at the ends of ſtrong ſtaves, the earth ſhall bee beaten ſo hard and firme together, that it may beare the burden of a man without ſhrinking. And in the beating of the Mould you ſhall have all diligent care that you preſerve and keepe your levell to a haire, for if you faile in it, you faile in your whole worke.

The

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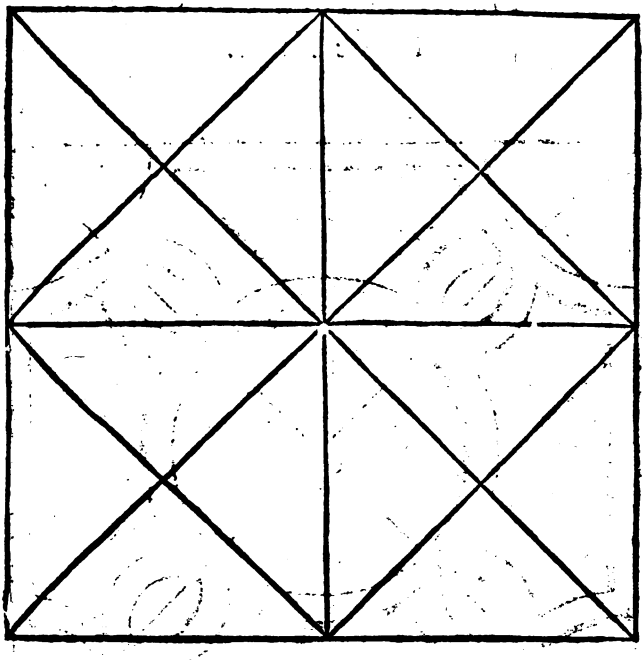
The Modell of drawing lines to frame all ſingle Knots.



Now for the time of his labour, it is ever beſt about the beginning of *February*, and indifferent about the midſt of *October*, but for the ſetting of your Primpe, or Boxe-border, let the beginning of *November* be your lateſt time, for ſo ſhall you be ſure that it will have taken roote, and the leafe will flouriſh in the Spring following: at which time your

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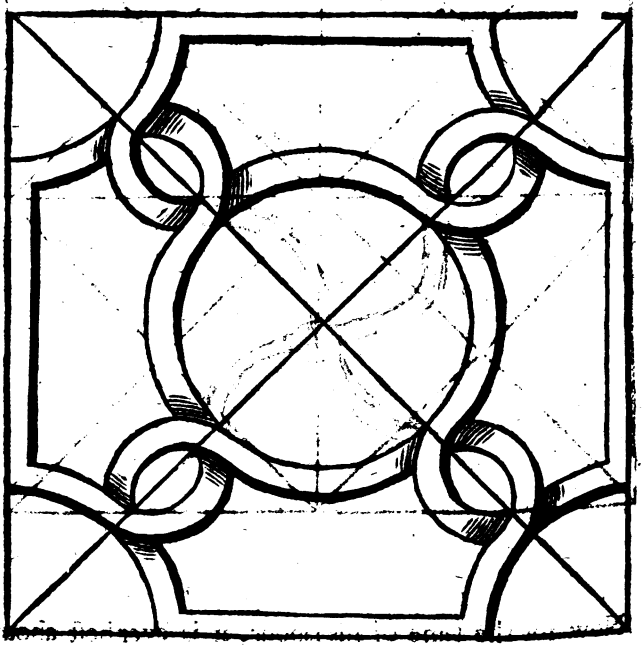
your ground being thus artificially prepared, you shall begin to draw forth your Knot in this manner: first, with lines you shall draw the forme of the figure next before set downe, and with a small instrument of yron make it upon the earth.

The Modell of the Quarter single Knot.



Which done, from the order and proportion of these lines you shall draw your single knots or plaine knots of the least curiositie

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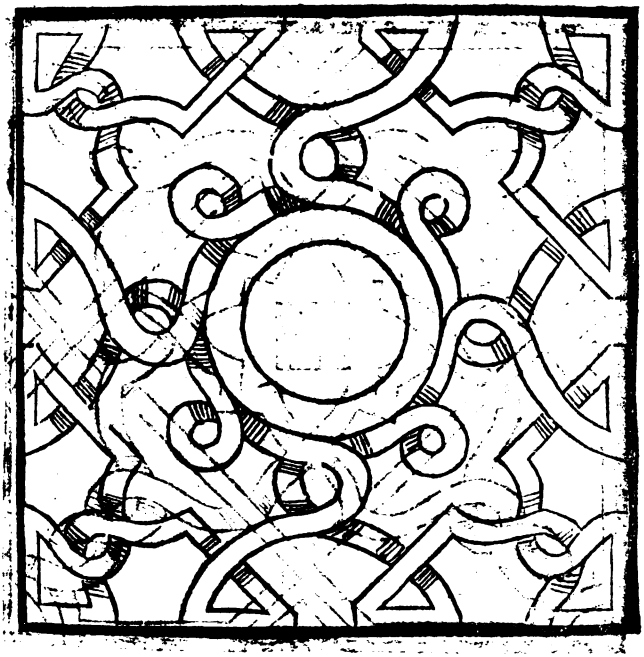
curiositie, as may appeare by this figure, being one quarter of the whole Knot: ever proportioning your Trayles and windings according to the lines there described, which will keepe your worke in just proportion, as you may perceive by this Figure, which being but the fourth part of a compleate Knot, by adding the other three parts unto it, it will appeare an exact Knot, though but a single Knot; and in this wise, and by the helpe of these single lines you may draw any single Knot whatsoever: as for example, this Knot following being single, yet more curious.

The single impleate Knot.



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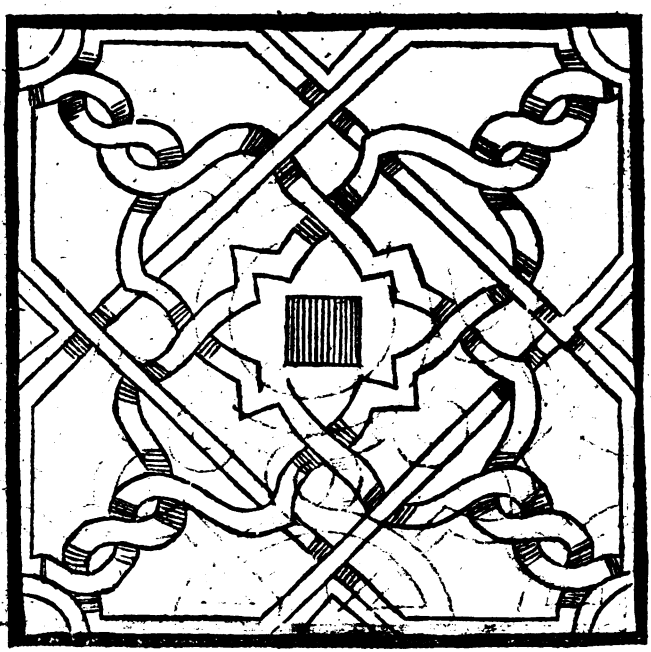
Or this compoſed of Diamonds.

The Diamond Knot.



But

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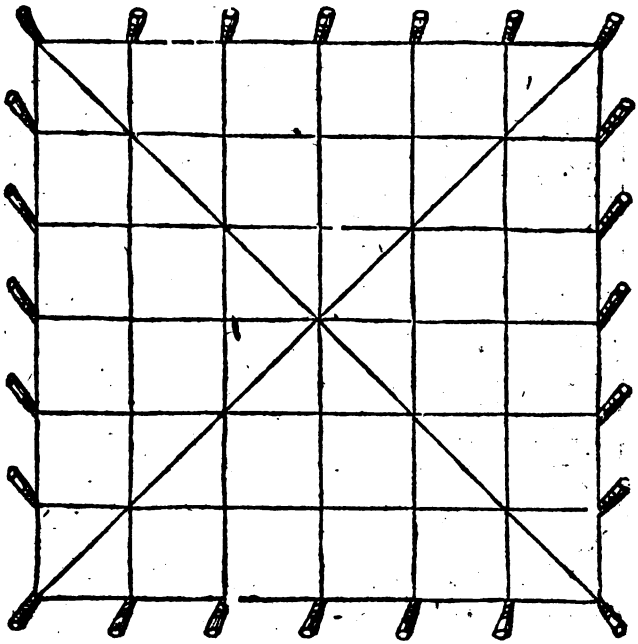
But if you desire to have Knots of much more curiositie being more double and intricate, then you shall draw your first lines after this proportion here figured, pinning downe every line firme to the earth with a little pinne made of wood.

The Modell of drawing lines for all Double Knots.



Which done you shall draw your double and curious Knots after the manner of the figure following, which is also but one quarter of the whole Knot, for looke in what

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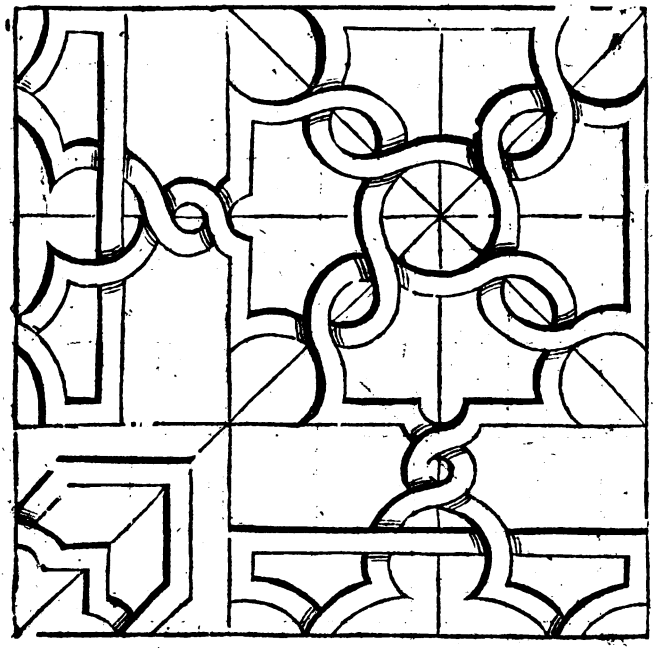
manner you doe one Knot, in like sort will the other three quarters succeed, your lines keeping you in a continuall even proportion.

The quarter Double Knot.



And in this manner as you draw these quarters of Knots, so you may draw out the whole Knots also, as this which consisteth of straight and direct forth right lines.

The

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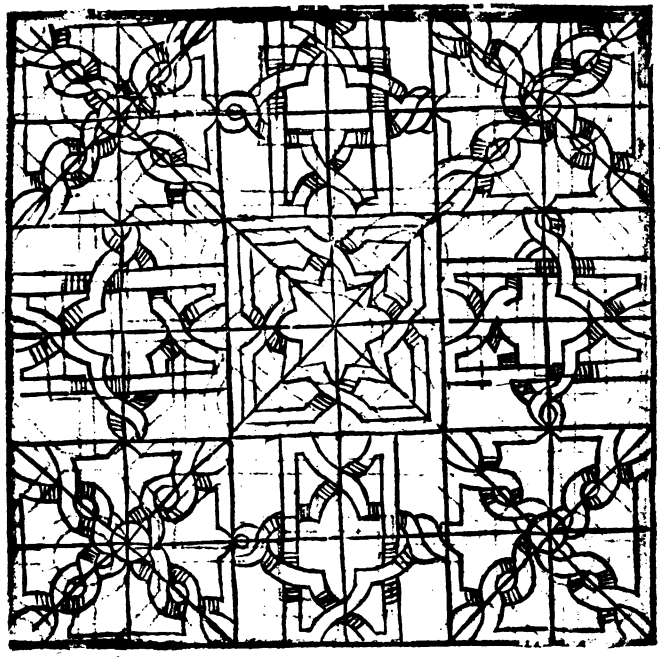
The Knot of Straight lines.



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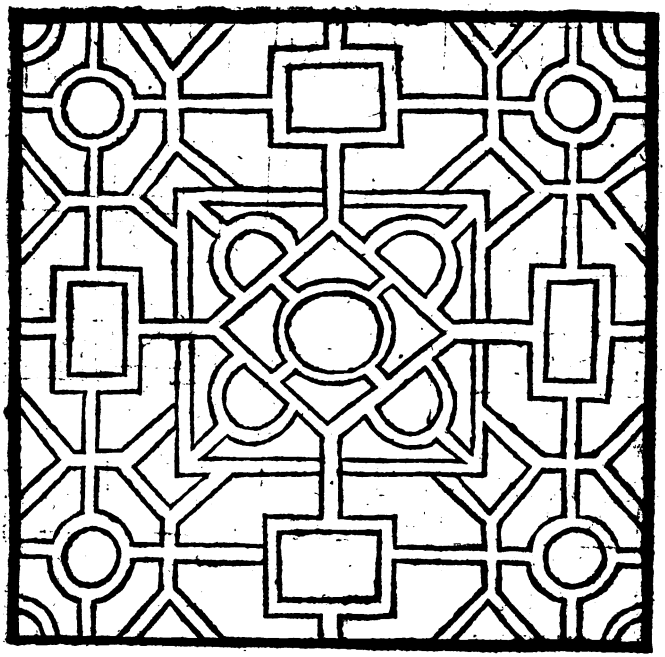
Or this which is more ſtraight and more dilated, and made more plaine, both to the eye and the hand of the Worke-man.

Another more ſtraight.



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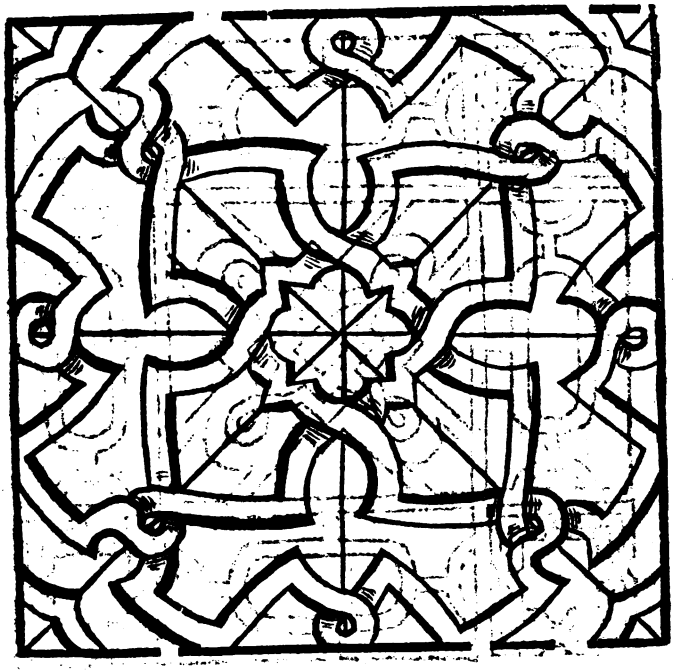
Next these I place your mixed Knots, which consist partly of Straight Lines, partly of Crosse, partly Diamond, and partly Diameter: as for example, this Knot following wherein all sorts of Lines are expressed.

The plaine mixed Knot.



Or

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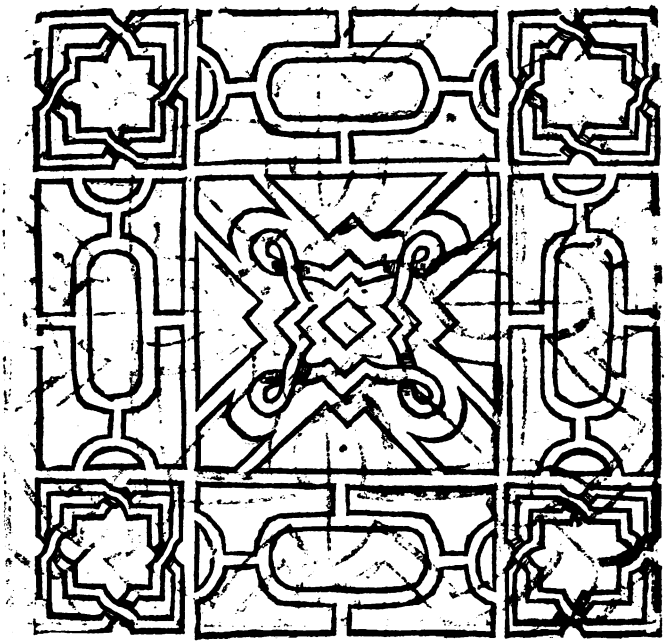
Or this which as it is straight and diamond, so it is also circular and round, and indeed carrieth in it a great deale of excellent art.

The Knot Direct and Circular.



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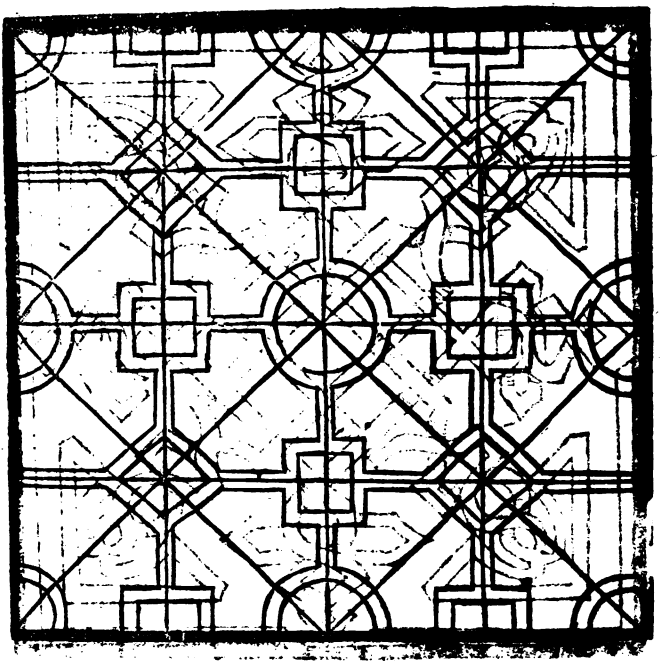
Next theſe I place your ſimple, ſingle Diamond Knots being no leſſe beautifull in Gardens, then any of the other before ſhewed, eſpecially when they are mixt both with Rounds and Squares, as you may ſee in this figure following.

The ſingle Diamond Knot with rounds and ſquares.



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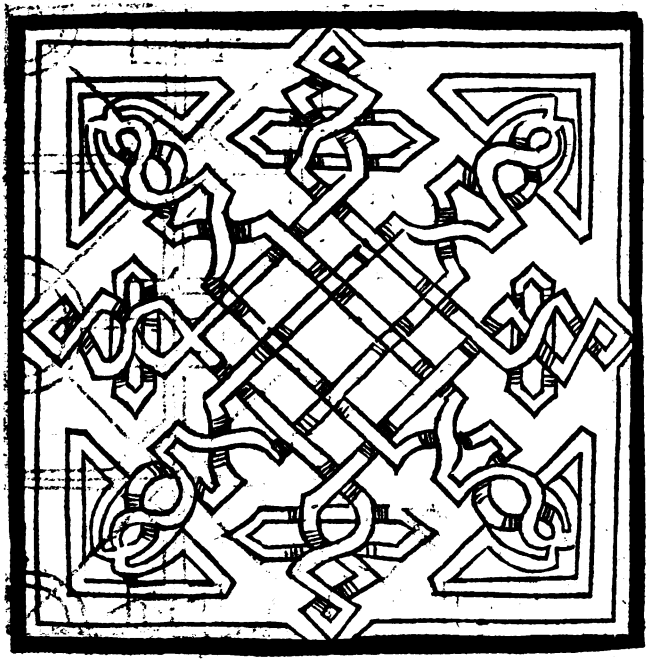
Lastly, I recommend unto you this Double Diamond Knot, being altogether diamond and pointed cleane throughout without any Rounds or direct straight Lines, as appeareth by this figure following.

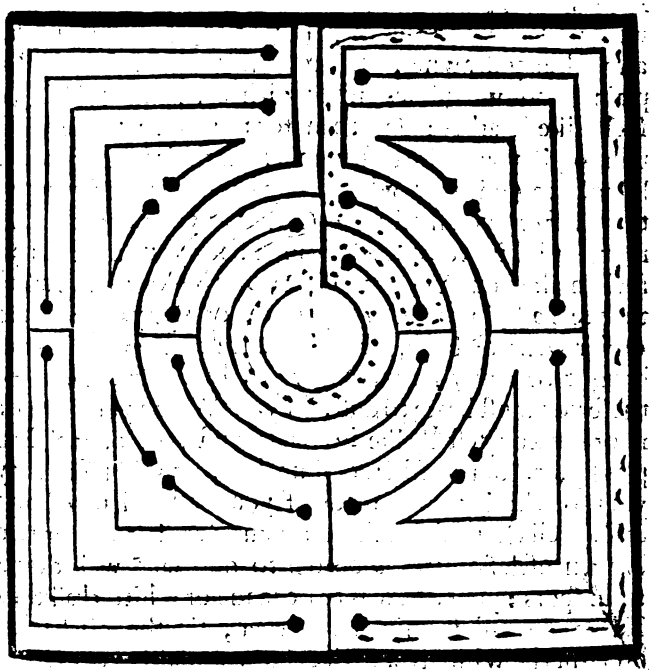
The double Diamond Knot.



With

With the like helpes and lines alſo you ſhall draw out your Mazes, and Laborinths, of what ſort or kind ſoever you pleaſe, whether they be round or ſquare, according to the proportion of this Modell following, which albe it be round, which is moſt curious and hard, yet you may at pleaſure by direct lines make them ſquare, diamond, or of any other proportion.

The Maze.



Now, as ſoone as you have drawne forth and figured your knot upon the face of your quarter, you ſhall then ſet it either with Germander, Hiſſop, Time, or Pinke-

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Gilly-flowers, but of all hearbes Germander is the most principall best for this purpose: divers doe use to Knots to set Thrift, and in time of need it may serve, but it is not so good as any of the other, because it is much subject to bee shaine with frost, and will also spread upon the earth in such sore, that without very painfull cutting, it will put your knot out of fashion.

Now there is another beautifying or adorning of Gardens, and it is most generally to be seene in the Gardens of Noblemen and Gentlemen, which may beare coate-armor, and that is, instead of the Knots and Mazes formerly spoken of, to draw upon the faces of your Quarters such Armes, or Ensignes, as you may either beare your selfe, or will preserve for the memory of any friend: and these armes being drawne forth in plaine lines, you shall set those plaine shadowing lines either with Germander, Hisop, or such like hearbes: and then for the more ample beautie thereof, if you desire to have them in their proper and lively colours (without which they have but one quarter of their lustre) you shall understand that your colours in Armory are thus to be made. First, for your mettals: you shall make your Yellow, either of a yellow clay, usually to bee had almost in every place, or the yellowest sand, or for want of both, of your Flanders tile, which is to be bought of every Iron-monger or Chandelor; and any of these you must beate to dust: for your White you shall make it of the courcest chalke beaten to dust, or of well-burnt plaister, or, for necessitie, of lime, but that will soone decay: your Blacke is to bee made of your best and purest coale-dust, well cleansed and sifted: your Red is to be made of broken unfeleste brickes beaten to dust, and well cleansed from spots: your Blew is to be made of white chalke, and blacke coale-dust mixed together, till the blacke have brought the white to a perfect blewnes: lastly your Greene, both for the naturall property belonging to your Garden, as also for better continuance and long lasting, you shall make of Camomill, well planted where any such colour is to

Yellow.

White.

Blacke.

Red.

Blew.

Greene.

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to be used, as for the rest of the colours, you shall sift them, and strew them into their proper places, and then with a flat beating-beetle you shall beate it, and incorporate it with the earth, and as any of the colours shall decay, you shall diligently repaire them, and the luster will be most beautifull.

There is also another beautifying of Gardens, which although it last not the whole yeare, yet it is most quaint, rare, and best eye pleasing, and thus it is: you shall upon the face of your quarter draw a plaine double knot, in manner of Billet-wise: for you shall understand that in this case the plainest knot is the best, and you shall let it bee more then a foot betwixt line and line (for in the largenesse consists much beauty) this knot being scored out, you shall take Tiles, or tileshreds, and fixe them within the lines of your knot strongly within the earth, yet so as they may stand a good distance above the earth, and this doe till you have set out all your knot with Tile: then precisely note the severall passages of your knot, and the severall thrids of which it consisteth, and then betwixt your tiles, (which are but as the shadowing lines of your knot) plant in every severall thrid, flowers of one kinde and colour, as thus for example: in one thrid plant your carnation Gilly-flower, in another your great white Gilly-flower, in another your mingle-coloured Gilly-flower, and in another your bloudred Gilly-flower, and so likewise if you can compasse them you may in this sort plant your severall coloured Hyacinths, as the red, the blew, and the yellow, or your severall coloured *Daffodils*, and many other Italian and French flowers: or you may, if you please, take of every severall plant one, and place them as aforesaid, the grace of all which is, that so soone as these flowers shall put forth their beauties, if you stand a little remote from the knot, and any thing above it, you shall see it appeare like a knot made of divers coloured Ribans, most pleasing and most rare.

Many other adumations and beautifyings there are which belong to the setting forth of a curious Garden, but

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forasmuch as none are more rare or more esteemed then these I have set downe, being the best ornaments of the best Gardens of this kingdome, I thinke them tastes sufficient for every Husbandman, or other of better quallity which delighteth in the beauty and well trimming of his ground.

CHAP. XVIII.

How for the entertainment of any great Person, in any Parke, or other place of pleasure, where Summer-bowers are made, to make a compleat Garden in two or three dayes.

IF the honest English Husbandman, or any other, of what quallity soever, shall entertaine any Noble personage, to whom hee would give the delight of all strange contentment, either in his Parke, or other remote place of pleasure neere unto Ponds, Rivers, or other waters of cleerenesse, after he hath made his Arbors and Summer-bowers to feast in, the fashion whereof is so common that every labourer can make them, he shall then marke out his Garden-plot, bestowing such sleight fence thereon as he shall thinke fit: then he shall cast forth his alleyes, and devide them from his quarters, by paring away the greene-swarth with a paring Spade, finely, and even, by a direct line (for a line must ever be used in this worke) then having store of labourers (after the upper-most swarth is taken away) you shall cast up the quarters, and then breaking the mould and levelling it, you shall make sad the earth againe, then upon your quarters you shall draw forth either Knots, Armes, or any other devise which shall be best pleasing to your fancie, as either knots with single or double trayles, or other emblemicall devise, as Birds, Beasts, and such like: and in your knots where you should plant hearbes, you shall take greene-sods of the richest grasse, and cutting it proportionably to the knot, making

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making a fine trench, you ſhall lay in your ſod, and ſo joyning ſod to ſod cloſe and artificially, you ſhall ſet forth your whole knot, or the portrayture of your armes, or other deviſe, and then taking a cleane broome that hath not formerly been ſwept withall, you ſhall bruſh all uncleanneſſe from the graſſe, and then you ſhall behold your knot as compleat, and as comely as if it had beene ſet with hearbes many yeares before. Now for the portrayture of any living thing, you ſhall cut it forth, joyning ſod unto ſod, and then afterward place it into the earth, now if within this plot of ground which you make your Garden piece, there be either naturall or artificiall mounts or bankes upon them, you may in this ſelfe-ſame manner with greene ſods ſet forth a flight, either at field or river, or the manner of hunting of any chaſe, or any ſtory, or other deviſe that you pleaſe, to the infinite admiration of all them which ſhall behold it; onely in working againſt mounts or bankes you muſt obſerve to have many ſmall pinnes, to ſtay your work and keepe your ſods from ſlipping one from another, till ſuch time as you have made every thing faſt with earth, which you muſt ram very cloſe and hard: as for Flowers, or ſuch like adornments, you may the morning before, remoue them with their earth from ſome other Garden, and plant them at your beſt pleaſure. And thus much for a Garden to bee made in the time of haſtie neceſſity.

How

CHAP. XIX.

How to preserve Abricots, or any kinde of curious Outlandish-stone-fruit, and make them beare plentifully, be the Spring or beginning of Summer never so bitter.

I Have knowne divers Noblemen, Gentlemen, and men of under-qualitie, that have beene most laborious how to preserve these tender stone-fruits from the violence of stormes, frost, and windes, and to that end have beene at great cost and charges, yet many times have found much losse in their labours, wherefore in the end, through the practice of many experiments, this hath beene found (which I will here set downe) the most approoved way to make them beare without all kinde of danger. After you have planted your Abricot, or other delicate fruit, and plasht him up against a wall, in manner as hath beene before declared, you shall over the tops of the trees all along the wall, build a large pentisse, of at least five or seaven foot in length, which pentisse over-shaddowing the trees, will, as experience hath found out, so defend them, that they will ever beare in as plentifull manner as they have done any particular yeare before. There be many that will scoffe, or at least, give no credit to this experiment, because it carrieth with it no more curiositie, but I can assure thee that art the honest English Husbandman, that there is nothing more certaine and unfallible, for I have seene in one of the greatest Noblemens Gardens in the kingdome, where such a pentisse was made, that so farre as the pentisse went, so farre the trees did prosper with all fruitfulnesse, and where the pentisse ended, not one tree bare, the Spring-time

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time being moſt bitter and wonderfull unſeaſonable.

Now I have ſeene ſome great Perſonages (whoſe purſſes may buy their pleaſures at any rate) which have in thoſe pentiſſes fixed divers ſtrong hookes of yron, and then made a Canvaſſe of the beſt Poldavie, with moſt ſtrong loopes, of ſmall corde, which being hung upon the yron hookes, hath reacht from the pentiſſe to the ground, and ſo laced with corde and ſmall pulleyes, that like the ſaile of a ſhip it might be truſt up, and let downe at pleaſure: this Canvaſſe thus prepared is all the Spring and latter end of Winter to be let downe at the ſetting of the Sunne, and to be drawne up at the riſing of the Sunne againe. The practice of this I referre to ſuch as have abilitie to buy their delight, without loſſe, aſſuring them that all reaſon and experience doth find it moſt probable to be moſt excellent, yet to the plaine Engliſh Husbandman I give certaine aſſurance that the pentiſſe onely is ſufficient enough and will defend all ſtormes whatſoever. And thus much for the preſervation and increaſe of all tender ſcone-fruit, of what nature, or clime bred ſoever.

CHAP. XX.

How to make Grapes grow as bigge, full, and as naturally, and to ripen in as due ſeaſon, and be as long laſting as either in France *or* Spaine.

DIvers of our Engliſh Gardiners, and thoſe of the beſt and moſt approved'ſt judgements, have beene very induſtrious to bring Grapes, in our kingdome, to their true nature and perfection: and ſome great perſons I know, that with infinit coſt, and I hope proſperous ſucceſſe, have planted a Vineyard of many Acres, in which the hands of the beſt experienced French-men have beene imployed: but for thoſe great workes they are onely for great men, and not for the plaine

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English Husbandman, neither will such workes by any meanes prosper in many parts of our kingdome, especially in the North parts: and I that write for the generall use, must treate of universall Maximes: therefore if you desire to have Grapes in their true and best kinde, most early and longest lasting, you shall in the most convenient part of your Garden, which is ever the center or middle point thereof, build a round house, in the fashion of a round Dove-coate, but many degrees lower, the ground worke whereof shalbe above the ground two or three brickes thickenesse, upon this ground-plot you shall place a groundsell, and thereon, fine, yet strong studs, which may reach to the roofe: these studs shalbe placed better then foure foote one from another, with little square bars of wood, such as you use in glasse windowes, two betwixt every two studs, the roofe you may make in what proportion you will, for this house may serve for a delicate banquetting house, and you may either cover it with Leade, Slate or Tile, which you please. Now, from the ground to the top, betweene the studs, you shall glase it, with very strong glasse, made in an exceeding large square pane, well leaded and cimented. This house thus made, you shall observe, that through the bricke worke there be made, betweene every two studs, square holes, cleane through into the house; then on the outside, opposite against those holes, you shall plant the roote of your Vine, having beene very carefull in the election and choice thereof: which done, as your Vine groweth, you shall draw it through those holes, and as you use to plash a Vine against a wall, so you shall plash this against the glasse window, on the inside, and so soone as it shall beginne to beare Grapes, you shall be sure to turne every bunch, so that it may lye close to the glasse, that the reflection of the Sunne heating the glasse, that heat may hasten on the ripening, and increase the growth of your Grapes: as also the house defending off all manner of evill weather, these Grapes will hang ripe, unrotted or withered, even till *Christmasse*. Thus have I given

yo

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you a taſte of ſome of the firſt parts of Engliſh Huſbandry, which if I ſhall finde thankefully accepted, if it pleaſe God to grant me life, I will in my next Volume, ſhew you the choice of all manner of Garden Hearbes and Flowers, both of this and other kingdomes, the ſeaſons of their plantings, their flouriſhings and orderings: I will alſo ſhew you the true ordering of Woods, both high and low, as alſo the breeding and feeding of all manner of Cattell, with the cure of all diſeaſes incident unto them, together with other parts of Husbandry, never before publiſhed by any Authour: This I promiſe, if God bee pleaſed: to whom be onely aſcribed the glory of all our actions, and whoſe name be praiſed for ever.

Amen.

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THE
Second Booke of the
Englisſh Husbandman.

CONTAYNING
the Ordring of the Kitchin-Garden, and the Planting of ſtrange Flowers: the breeding of all manner of CATTELL. Together with the Cures, the feeding of *Cattell, the Ordring both of Paſtures, and* Meddow-ground: with the uſe both *of high wood, and under-wood.*

WHEREUNTO IS ADDED
a Treatiſe, called *Good mens Recreation*: Contayning a Diſcourſe of the generall Art of Fiſhing, with the Angle, or otherwiſe: and of all the hidden ſecrets belonging thereunto.

TOGETHER
With the Choyce, Ordring, Breeding, and Dyeting of the fighting-*Cocke*.

Newly reviewed, enlarged, corrected, and amended by the Author.

By *G. M.*

LONDON,
Printed by IOHN NORTON, for HENRY TAVNTON, in St. *Dunſtans* Church-yard, in *Fleet-ſtreet*. 1635.

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THE FIRST Part of the ſecond Booke of the *Engliſh Husband-man*: Contayning the ordring of the Kitching-garden, the planting of ſtrange Flowers, and the preſervation of all Seeds, Hearbs, Flowers, and Fruits from noyſome things.

CHAP. I.

The choyce of ground for the Kitchin-garden, and the ordring thereof.

Promiſe honeſt, and profitable being ſeriouſly made, I hold a ſinne capitall to neglect, eſpecially where the goodneſſe ſtretcheth it ſelfe over a whole Kingdome: and hence I have aſſumed to perfect both my promiſe, and my labour in building up that weake foundation which I formerly layd, of the *Engliſh Husbandman*: wherein, contrary to all other Authors, I am neither beholding to *Pliny*, *Virgil*, *Columella*, *Varo*, *Rutillius*, *Libault*, nor any

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other Forrainer, but onely to our owne beſt experienſt Countrymen, whoſe daily knowledge hath made them moſt perfect in their profeſſions: and what better inſtruction can be had than that which we receive from the profeſſors being men of our owne neighbourhood, acquainted with our Climate, and Soyle, and the neceſſary things agreeing with the bettering of the ſame? and not reſort as our Tranſlators have done, to ſtrangers helpe, who tels you that you muſt meanure your ground with Aſſes dung, when our Kingdome hath not ſo many foure-footed Aſſes as will meanure one Acre, and many ſuch like things which our Kingdome affordeth not: therefore according to the plaine true Engliſh faſhion, thus I perſue my purpoſe.

The choyce of Ground.

Touching the choyce of Ground, I have in the former part of this Booke ſhewed you the true nature, and goodnes of every ſeverall Soyle, and you are to underſtand that the beſt Soyle is beſt for this purpoſe, becauſe it is leaſt labourſome, and moſt profitable: yet notwithſtanding that ſome of our tranſlated Authors doth utterly diſalow for Gardens many Soyles, as namely, all Sands, all Chawky earths, all Gravell, all Earths like duſt, and any Earth which chappeth or openeth in the heat of Summer, by that meanes depriving almoſt halfe our Kingdome of the benefit of Gardens, yet I aſſure you that there is no Soyle whatſoever (if it lie from the inundation of water, or be not abſolutely boggy) but with induſtry will beare any Fruit, Hearbe, or Flower, plentifully, and without any caſualty proceeding from the barrenneſſe thereof: witneſſe a moſt worthy Garden in the barren Peake of *Darbyſhire*, where there is no curious Tree, or Plant wanting, nor doe they flouriſh, in any place more bravely.

Now for mine owne part, I write generally to all Husbandmen, not to thoſe only which live in fertile, and fat Soyles, and therefore I would have no man ſay, the Soyle where I live is ſo barren, that I cannot have

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a Garden: for if the Soyle wherein you live, be barren, than ſhall you in the latter end of September breake up your Earth more than a Spade graft deepe, and be well aſſured that at every Spade-graft you breake the mould well, and leave not the roots of any weeds within it, then let it reſt till the midſt of October, at which time if any weeds appeare upon it, by all meanes let them be pluckt up by the roots, which done, you ſhall trench your ground at leaſt a yard, and a halfe deepe, and than bury in thoſe trenches, if it be a Sand or Gravell earth, great ſtore of Oxe or Cow meanure, if it be a cold Chalky Clay, or a moyſt ground, than great ſtore of Horſes meanure, of both which meanures the oldeſt, and rotteneſt is the beſt: but if you live in ſuch a Soyle as there is neyther of theſe meanures bred therein, then take ſtraw of any kind whatſoever, and ſpread it in the high-way where there is much travell, and when it is rotten with the beating of Horſefeet, than cauſe it to be ſhoveld up, and with it fill your trenches, but if Straw be wanting, than if you have any muddy ditches or ponds, ſcowre the mud out of them, and with it fill up your trenches; and although theſe are not ſo long laſting as the two firſt ſorts of meanures, yet they are ſufficient to bring forth increaſe, and muſt ſupply where neceſſity inforceth, alwaies having diſcretion when you ſee your ground abate in fruitfulnes, to replenish it with freſh meanure.

The bettering of Grounds.

The trenching of Grounds.

Now as you fill your trenches with meanure, let one mixe the Earth therewithall, and as it were blend, and incorporate them together: thus having gone over ſo much ground as you intend to plant or ſow upon, you ſhall let it reſt till the midſt of January, at which time you ſhall breake it up in trenches againe, but not above three quarters of a yard deepe, and then fill up thoſe trenches with meanure as before, and lay your Earth as levell as is poſſible, and ſo let it reſt till the beginning of March (if the weather be ſeaſonable for ſowing or planting) otherwiſe let it ſtay till mid-March, and as

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soone as the Moone is changed you shall then dig it up the fourth time, and make it fit to receive your Seed, but in this fourth time of turning over your earth, you shall dig it but a little better than a Spade-graft deepe, and ever as you dig it, mixe it with fresh meanure: if your ground be subject to much chapping or riving, then you shall at this last digging mixe the earth with ashes, and Horse meanure mixt together, which will binde, and hold the earth from chapping.

Of breaking the Garden moulde.

After you have digd your ground in this order, and made it levell, you shall with an iron Rake breake the great clods of Earth, and bring it to as fine a mould as is possible, ever observing that if in the breaking of the clods or otherwise you perceive the roots or stalks of any weeds to arise, you shall presently with your hand pull them out, and cast them on heaps, that they may serve eyther for the fire or the dunghill: which done,

Ordring of Garden beds.

you shall tread out your beds in such orderly sort, that you may passe from one to the other without eyther treading upon the beds, or striding over them: and thus much for the barren, and sterrill ground, which although all ancient, and late writers reject, as not worthy to be imployed to this use, yet beleeve it, being husbanded as is said before, it will equall in fruitfulnes the best ground.

Of the fruitfull Soyle.

Touching your rich, and perfect grounds, which of themselves are apt to put forth with little labour, you shall onely at the latter end of September breake up the Earth, and making greater Trenches, fill them well with Oxe meanure, and then turning the Earth upon the meanure, levell your ground very carefully, breake the clods, and rake it very painfully, and then tread out your beds, as is before sayd artificially: but if the ground which you breake up, be eyther greene-swarth, or much overgrowne with weeds (as these rich soyles must ever be the one or the other) (for they will not be idle, but continually bringing forth) then at this first digging, and dunging

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dunging you shall have divers which follow the Spade, who shall take away all manner of roots, greenes, grasse-tufts, stones, or whatsoever may breed anoyance to the ground: which worke being perfected, you shall let the ground rest all winter till the beginning of March, that the frost may mellow, and ripen the mould, and also kill the roots of such weeds as the Spade hath turned up, and have beene omitted to be pulled away.

Now so soone as March is come, upon the first change of the Moone, you shall dig up this Earth againe, levell it, and order it in all poynts as was sayd of the barren Earth, onely there will need no more use of meanure, but as soone as it is digged, raked, levelled, and brought into a fine mould, you may then tread out your Beds, as aforesayd, ever proportioning the quantity of them according to the quantity of your seeds, having the most of that which is most in use, and the least of the contraty.

Now as touching the fencing, and incloſing of your Garden, I have in the former Booke shewed you the same at large, and given severall instructions, according to mens severall abilities, with this caution, that whether your fence be wall, pale, dead-hedge, ditch, or quickset, yet it must be so high that it may with assurance keepe all manner of Pullen from flying over the same, who are the greatest enemies to a Garden that may be.

There would be also in this Kitchin-Garden, if with conveniency it may be brought to passe, eyther a Pumpe, Well, or Cesterne, which might flow continually with water all the Summer time, for the watering of Hearbs, as shall be hereafter declared. And thus much touching the choyce of ground for a Kitchin-garden, and the ordring of the same.

The necessariest Ornament in a Garden.

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CHAP. 2.

Of the ſowing, and ordering of all manner of Pot-hearbs.

WHen you have prepared your ground, and caſt your beds in an orderly faſhion, as is before ſpoken, you ſhall then take your Seeds, which Seeds would by no meanes be above a yeere old: and having ſorted them ſeverally, every one by it ſelfe, and appoynted the beds which ſhall ſeverally receive them: you ſhall in this manner ſow your Pot-hearbs, which crave not much roat, becauſe their onely benefit is in the leafe: take your ſeeds, and put them into a wooden Fray, then take of your Garden mould, the fineſt that may be, being made almoſt as fine as aſhes, and mixe your Seeds, and that mould very well together, then goe to the bed, where you meane to beſtow them, and having newly rakt it (to ſtirre up the freſh mould) with your hand ſprinkle, and ſow them all over the bed, ſo thicke as may be: which done, with a fine rake, Rake the bed gently over, then taking ſpare fine mould, put it into a riddling Sive, and ſift it over the bed better than two fingers thickneſſe, and ſo let it reſt: thus you ſhall doe ſeverally with every ſeed one after another, beſtowing every one upon a ſeverall bed.

Of all ſorts of Pot-hearbs.

Now for your Pot-hearbs, which are moſt generally in uſe, they be theſe. *Endive*, and *Succory*, which delight in moyſt ground, and will endure the winter.

Of *Endive*, and *Succory*.

Bleete of which there be two kinds, Red, and White: this Hearbe never needeth weeding, and if he be ſuffered to ſhed his ſeed it will hardly ever be got out of a Garden.

Of *Beets*.

Then *Beets*, which muſt be much weeded, for they love to live by themſelves, and if they grow too thicke you may take them up when they are a finger long in their owne earth, and ſet them in another bed, and they will proſper much better.

Land-*Creſſes*.

Then land-*Creſſes*, which is both a good Pot-hearbe, and

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and a good Sallet-hearbe: it loveth ſhadowy places, where the Sunne ſhineth leaſt, and ſtandeth in need of little dung.

Then *Parcely*, which of all Hearbs is of moſt uſe, it is longeſt in appearing above ground, and the elder ſeed is the quicklier in growth, but not the ſurer; but eyther being once come up increaſe naturally, and doe hardly ever decay; it cannot grow too thicke, but as you uſe it you muſt cut off the tops with your knife, and by no meanes pull up the roots: if it be put into a little purſſe, and beaten againſt the ground, to bruiſe it a little before it be ſowne, it will make it have a large criſped leafe. *Parcely.*

Then *Savory*, of which are two kinds, the Winter-*Savory*, and Summer, both delight in leane ground, and are quicke of growth, and long laſting. Of *Savory.*

Then *Time*, of which are alſo two kinds, the running *Time*, and the Garden *Time*, they delight in fertile ground, and from the ſeed are very ſlow of growth, therefore it is beſt ever to ſet them from the ſlip. The running *Time* doth delight in the ſhadow, but the Garden *Time* in the Sunne. Of *Time.*

Then French-Mallowes, which will joy in any ground, and are quicke of growth. French-*Mallowes.*

Then *Chervill*, which will not by any meanes grow with any other Hearbe. *Chervill.*

Then *Dill*, which may be ſowne almoſt in any moneth of the yeere as well as March: it endureth all weathers, but loveth the warmth beſt. Of *Dill.*

Then *Iſop* which in like manner as *Time*, is ſlow of growth from the ſeed, and therefore fitter to be ſet from the ſlips after it hath once taken root it encreaſeth wonderfully, and will hardly be deſtroyed. Of *Iſop.*

Then *Mints*, which flouriſh onely in the Summer time, but die in the Winter, it delighteth moſt in the moyſt ground. Of *Mints.*

Then *Violets*, the leaves wherof are a good Pot-hearb, and the Flowers preſerved in cloſe glaſſe-pots, with *Violets.*

ſtrong

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ſtrong Wine-vinegar, and Sugar, a moſt excellent Sallet: it doth delight to grow high, and will grow ſpeedily eyther from the plant or from the ſeed.

Of *Baſill.* Then *Baſill*, which would be ſowne in the warme weather, as at the beginning of May, for the ſeed is tender, and when you have ſowne it, you ſhall preſſe the earth downe upon it with your feet, for the ſeed can endure no hollowneſſe: if you ſow it at the fall of the Leafe, you ſhall ſprinkle the ſeed with Vinegar, and when you water it let the Sunne be at his height.

Sweet *Marioram.* Then ſweet *Marioram*, which would be ſowne on rich ground, and far from Sunſhine, for it taketh no delight in his beames.

Marigolds. Then *Marigolds*, which renew every moneth, and endure the Winter as well as the Summer: this Hearb the oftner you remove it, the bigger it groweth.

Of *Strawberries.* Then *Strawberries*, whoſe leaves are a good Pot-hearb, and the fruit the wholſommeſt berry: this Hearb of all other, would be ſet of the plant, and not ſowne from the ſeed, for the oft changing, and removing of it cauſeth it to grow bigger, and bigger: it groweth beſt under the ſhadows of other Hearbs, but very ſufficiently in beds, or elſewhere.

Of *Borage*, and *Bugloſſe.* Then *Borage*, and *Bugloſſe*, both which are of one nature: they would be ſowne in ſmall quantity, for where they take they will runne over a whole Garden; the ſeed muſt be gathered when it is halfe ripe it is ſo apt to ſhed, and when you gather it you muſt plucke up the ſtalks, leaves, and all, and ſo laying them one upon another three or foure dayes, there owne heate will bring the ſeed to ripeneſſe.

Of *Roſemary.* Then *Roſemary*, which is an Hearb tender, and curious, yet of ſingular vertue; it is ſoone ſlaine with froſt or lightning; it will grow plentifully from the ſeed, but much better from the ſlip, it delighteth to be planted againſt ſome Wall where it may have the reflection of the Sunne, for to ſtand vnpropped of him-

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himselfe, the very shaking of the wind will kill it.

Then *Penyroyall*, which most properly is used to be mixt with Puddings, made of the bood of Beasts, and Oatmeale; of it there be two kinds, male, and female: the male beareth a white flower, and the female a purple: it must be sowen in small quantity, for it will runne, and spread over-much ground: it delighteth most in moyst earth. Of *Penyroyall*,

Then *Leekes*, which would have a fertile ground, and as soone as they be shot up a good length you shall cut the blades to the polt, and then remove the heads, and set them borderwise about your other beds: this removing after the cutting off the blads, will make them grow bigger, and prosper better, as for thrusting Oyster-shels or Tyle-sheads under them, to make the heads bigger, it is a toy; for if the mould be loose, and good, the Leeke will come to his perfect growth: they may be sowne both in March, Aprill, May, and Iune, and they may be removed all Iuly, August, September, and October. Of *Leekes*,

Then *Onions*, which differ not much from the nature of Leekes, they love a fertile Soyle, and would be sowne with the seeds of *Savory*: when they come up if they grow too thicke, as is often seene, you shall plucke up some, and spend them in the pot, and in sallets, to give the rest more roome, and some you shall take up, and replant in other beds, which you may preserve for seed, those *Onions* which you would not have to seed, you shall cut off the blades in the midst, that the juyce may descend downward, and when you see the heads of the *Onions* appearing above the earth, you shall with your feet tread them into the ground: there be some very well experienst husbands, which will take the faireſt, goodliest, and soundest *Onions* they can get, and in this moneth of March set them three fingers deepe in the earth, and these of all other bring forth the purest, and best seed, for which purpose onely they are preserved: as soone as Of *Onions*,

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your seed-Onions are knotted, you shall underprop them with square cradles, made of sticks, least the waight of the boules which carry the seed, should breake the blades.

Of gathering *Onion*-seed, or the *Onion*.

The time of gathering your seed is, when it is all turned purely backe, and the time of gathering the *Onions* is, when the heads doe forsake the earth, after they be gathered you shall lay them on a dry floore for a fortnight or more, and then bind them up in ropes, and hang them where they may have the ayre of the fire, onely note, that you gather your *Onions*, in the increase of the Moone, as they were sowne, and not otherwise.

Many other Pot-hearbs there be, which for as much as they differ nothing, eyther in sowing, planting, or ordring, from these which I have rehearsed, I will heere omit them, and thinke this sufficient, touching the sowing, and ordring of all manner of Pot-hearbs.

Chap. 3.

Of the sowing of certaine Hearbs, which are to be eaten, but especially are medicinall, yet ever in the Husbandmans Garden.

Of *Arage*.

OF Hearbs which are medicinall, I will begin with *Arage*, or *Orache*, which being cold, and moyst is very excellent against the hot Gout: it is to be sowne in any moneth, from February till December: it loveth much moysture, and therefore must be oft watered: it must be sowne exceeding thin, and quickly covered, for the ayre is offensive.

Of *Lumbardy Leveage*.

Next it is *Lumbardy Loveage*, which being hot, and dry, is very purgative, it desireth a very fruitfull ground, but if it be sowne where it may have much shadow, and some shelter accompanied with moysture, it will grow in any ground, the moneths for sowing therof, is, from the midst of February till Harvest.

Fennell

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Fennell is also hot, and dry, and it comforteth the stomacke, openeth the inward vessels, and helpeth digestion; it may be sowne in any moneth, and upon any indifferent ground, especially if it be a little stony, the seed would not be very old, though of all other it be the longest laster. Of *Fennell.*

Anise is hot, and dry, it dissolveth humours, and obstructions, and is very comfortable to weake stomacks, it delighteth in a good, and loose mould, and is to be sowne in the height of the Spring onely. Of *Anise.*

Comin is of the nature of *Anise*, and *Fennell*, and mixt with either, is very soveraigne against all inward sicknesses proceeding from cold, it loveth a fruitfull rich earth, and much warmth, and therefore the later it is sowne in the spring, it is so much the better, and above all things it would be sowne in the hottest time of the day, and if it be mixed with other seeds, it is so much the better, and appeareth the sooner. Of *Comin.*

Coliander is of the nature of the earth, cold, and dry, it helps digestion, and suppresseth vapours which offend the braine, it may be sowne upon any indifferent ground, and in any moneth except December, and January, the elder the seeds are, the better so they be sound, and they desire much watering. Of *Coliander.*

Rue or *Hearb-grace* is hot, and dry, and is very soveraigne against all inward infection, putrifactions, and impostumations, it joyeth in any reasonable ground so it grow warme, and dry, the moneths fittest for the sowing thereof, is March, Aprill, or May, and the mould would be firme, and not subject to ryving, whence it proceeds that no meanure is so good for the encrease thereof as horse-dung, and ashes mixt together: the beds would be made high, and descending, that no moysture may stay thereon, they must be carefully weeded, for in their first growth otherwise they are soone choaked. Of *Rue.*

Organy is hot, and dry, and excellent against any sick- Of *Organy.*

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neſſe of the liver, the ground in which it moſt joyeth would be a little ſtony, and full of rubbiſh, yet by no meanes undunged, the moneth fitteſt for the ſowing thereof is March, and September, the Moone being in *Libra* or any other moyſt ſigne, it muſt be continually watred till it appeare above the earth, but after forborne, for being once well fixed, it is ever certaine.

Of white *Poppy*. White *Poppy* is cold, and moyſt, and much provoketh ſleepe: it delights to be ſowen in a rich, warme, dry ground, in the moneths of March, September, or November.

Of *Germander*. *Germander* is hot, and dry, and excellent againſt the Kings evill; obſtructions of the Spleene, and hardneſſe of Vrin; it is a hard Hearb, and will proſper in any ground, it is to be ſowne, eyther in the ſpring or fall of the leafe, and is moſt comely for the ſetting forth of knots in Gardens.

Of *Cardus Benedictus*. *Cardus Benedictus*, or the bleſſed Thiſtle, is hot, and dry, it is very ſoveraine againſt moſt inward ſickneſſes, ſtancheth blood, and is a great comforter of the braine, it delighteth in a rich ground, and looſe well tempered mould, it muſt be ſowne very ſhallow, and not covered aboue two inches deepe, the firſt quarter of the Moone is beſt to ſow it in, and in the moneths of March, May or September, if you ſow a little fine flaxen Wheat with it, no doubt but it will proſper the better.

Of *Angelica*. *Angelica* is hot, and dry, it openeth, and diſſolveth obſtructions, is an excellent cordiall againſt poyſon, and all infections, it helpeth the collicke, and cureth the biting of mad dogges, or venomous beaſts, it loveth a fruitfull dry mould, but may not endure the trouble of weeds, it is to be ſowen in March, or Aprill, and it flouriſheth in Iuly, and Auguſt, it hath a ſweet odour, and helpeth all evill, and infected ayres.

Of *Valerian*. *Valerian* is hot, and dry, and preventeth infection, it

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it helpeth ſtitches, and other griefes proceeding from windy cauſes, it loveth to grow in moyſt, and low places, the ground being well meanured, and till it be ſhot at leaſt a handfull high, it muſt be kept with continuall watring, the moyſteſt time of the yeere is the beſt to ſow it in.

Elecampana is hot, and moyſt, and good for offences in the lungs, or any outward joynt, being troubled with paine proceeding from cold: it is better much to be ſet than ſowen, yet notwithſtanding it may ſafely enough be ſowen at any time after mid-March, the ground being rich, ſoft, and looſe, and the ſeed ſtrowed very thin, and at leaſt two fingers diſtance one from another. Of *Elecampana.*

Pepperwort is hot, and dry, yet of the two much more hot, it is good againſt all kind of aches, and other paine in the joynts, or ſinewes: it delighteth in a rich blacke Soyle, fat, and looſe: it would be ſowne in February, and removed in September. Of *Pepperwort.*

Philipendula is very hot, and dry, and is good againſt abortive births, Stone, Strangury, or any griefe proceeding from cold cauſes: it may be ſowne in any barren, ſtony, or gravelly ſoyle, in the moneths of May, Aprill, or September: it neyther deſireth much weeding, nor much watring, but being once committed to the ground appeareth ſuddenly: and thus much of thoſe Hearbs which are fit for Medicine, of which though there be many others, yet they differ not in their ordring from theſe already declared, Of *Philipendula.*

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Chap. 4.

Of divers sorts of Sallet-hearbs, their manner of sowing and ordring.

Of *Lettuce.*

AMongst the many numbers of Sallet-hearbs, I thinke it not amisse to begin first with *Lettuce*, which of all other whose vertue is held in the leafe, is most delicate, tender, and pleasant: the ground than in which it most delighteth, is that which is most fertile, best laboured, and of the finest mould, being soft, loose, and more enclining to moysture than dryenesse: it may be sowne in any moneth of the yeare, from February to November, it is very quicke of growth, and will appeare above the earth in foure daies after the sowing: it would at first be sowne thicke, and carefully kept with morning and evening watrings, if the season be dry, but not otherwise; after it is growne, and faire spread above the earth, which will be in a moneths space or thereabouts, you shall chuse out the fairest, and goodliest plants, and taking them up with the earth, and all about their roots, replant or remove them to a new bed of fresh mould, and there set them a foot distance one from another, and fixe their roots fast, and hard into the ground: then cover or presse them downe with Tyle or Slate stones, to make them spread, and not spring upward, by which meanes the leaves will gather together, and cabbadge, in a thicke, and good order, for it is to be understood, that the oftner you remove your *Lettuce*, the fairer, and closer they will cabbage. There be divers which observe to remove *Lettuce* as soone as fixe leaves are sprung above the ground, but I like better to remove them when they begin to spindle: they are most esteemed in the moneths of Aprill, May, and Iune, for in Iuly they are supposed to carrie in them a poysonous substance.

Of *Spynage.* Next the *Lettuce* I preferre the Hearb *Spynage*, which delight-

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delighteth in a wel-dunged earth, and may be sowne in Aprill, March, September, or October: it would not be mixed with other seeds, because it prospereth best alone.

Sparagus joyeth in a fertill moyst ground, the mould being made light which covers it, and the ground well dunged, the spring is the best time to sow it, and it must be sowne in long furrowes or trenches made with your finger, and not universally spread over the bed as other seeds are; it loveth moysture, but may not endure the wet to lie long upon it, and therefore the beds would a little descend: it must not be removed till the roots be so feltred together, that they hinder the new branches from springing up, which commonly is two yeeres. Of *Sparagus.*

Colworts or *Cabbage*-seed delighteth in any well husbanded ground, and may be sowne in all sorts, and seasons as *Lettuce* is, and must also in the like manner be removed, after the principall leaves are come forth, which will make them to gather together, and cabbadge the better: and as they may be sowne in any season of the yeere, so likewise they may be removed at all seasons likewise, except the frost or other unseasonable weather hinder you: and although some men will not allow it to be sowen in clay-grounds, gravell, chalke, or sand, yet they are deceived; for if the earth be well ordred, they will grow plentifully, onely you must observe when you remove them to let them have earth roome enough. Of *Colworts.*

Sage is in Gardens most common, because it is most wholsome, and though it may be better set from the slip than sowen in the seed, yet both will prosper, it loveth any well-dreſt ground, and may be sowen eyther in February, March, September, or October, it loveth also to grow thicke, and close together, and will of it selfe overcome most weeds: it asketh not much dung; neyther too great care in watring, only it would be oft searched, for Toades, and other venomous things will Of *Sage.*

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delight to lie under it, the more Sunne, and ayre it hath, the better it is.

Of *Purslane.* *Purslane* is a most excellent Salet-herb, and loveth a fertile soyle, and though it may be sowen almost in any moneth, yet the warmest is the best, as Aprill, May, Iune, or September. Bucke ashes are an excellent meanure for them, and for most Sallet-herbs else, but above all they love dry dust, and house-sweepings, they are apt to shed their seed, whence it comes that a ground once possest of them will seldome want them, they may also be removed, and will prosper much the better.

Of *Artichokes.* *Artychokes* love a fat earth, and may be sowen in February or March, the Moone encreasing, the seeds must not be sowen together, but set one by one a good distance asunder; they must lie somewhat deepe, and be firmely covered; yet if you can procure them, I rather wish you rather to set them from slips or young Plants, then sow them from the seeds, for they do so naturally love the earth, that you can hardly slip so wast a leafe from an *Artychoke* as will not take root; if you sow the seed, you must be carefull to weed, and water them well, for the first leaves are very tender; also if you remove them after their first springing, the fruit will be bigger, and better.

Of *Garlicke.* *Garlicke* is best in September, and November, to be set from the clove, in, and about the borders of beds, or other seeds, halfe a foot one from another, and in February, March, and Aprill, to be sowne from the seed: it must be ordred as you order *Onion*-seed, it loves not much wet nor extreame drought, only it desires a good mould which is rich, and firme, yet not too much dunged.

Of *Raddish.* *Raddish* loveth a fertile ground, that is well dunged chiefly with mans ordure, that is deepe trencht, and hath an easie, and light mould, and the seeds would be placed either in rowes, or about the borders of beds, as you doe *Garlicke*: the manner of sowing it is with a dib-

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ble or round ſticke, to make a hole into the ground almoſt a foot deepe, and then into that hole to put not above two ſeeds at the moſt, and then cloſe the hole up againe, and let the holes be foure fingers one from another, it may be ſowen in moſt moneths of the yeere if the froſt hinder not, and to make the root large, and tender, and to keepe the branch from ſeeding; you ſhall as it ſprings crop off the principall leaves which grow againſt the heart of the root; to tread them downe into the earth after they have faſt roote is good alſo.

Navew, if the Earth have any ſmall goodneſſe in it, it will grow plentifully, neyther is offended with any aire, only the mould would be looſe, and rough, for otherwiſe it many times turneth to Rape: the ſeed naturally commeth up very thicke, therefore it is expedient to remove them, and plant them thinner, for that beſt preſerveth their natures, they may be ſowne in February, March, Aprill, September, or October. Of *Navew*.

Perſneps or *Carrets* are of one, and the ſelfe nature, they delight in a good fat Earth, and would be ſowne reaſonably thicke, in long deepe trenches like furrowes, having a gentle, and eaſie mould either in the moneths of Ianuary, February, or March, or in September, October, or December, they muſt be carefully well weeded, and if the Earth be fat, they neede not much watring or other attendance. Of *Perſnips*, and *carrets*.

Pompyons, *Gourds*, or *Mellons*, deſire a very good ground, or by Nature or Art, the ſeeds muſt be ſowne very thinne, as at leaſt halfe a foot one from another, they would lie reaſonably deepe, yet the mould very gentle which covers them, they are ſubject to ſpread, and runne over much ground, therefore as they grow you muſt direct their ſtemmes ſo as they may not annoy one another, and when they flower you ſhall lay broad Tiles or Slate ſtones under them, that the fruit nor flower may not touch the Earth; if you plaſh them up againſt Trees, or walles where they may have the reflection of Of *pompions*.

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the Sunne, the fruit will be larger, pleasanter, and sooner ripe; they need no weeding nor watring after you see them appeare above the earth, and the best seasons to sow them in, is February, March, or Aprill, those are the best *Pompyons* which have the smallest seeds, and are of the most yelloweſt complection.

Of the *Cowcumber.*

Cowcumber, is a delicate pleasant, yet very tender fruit, and delighteth in an extraordinary fat earth, especially during the opening or sprouting of the seed, therefore the best, and most undoubted safest way for sowing them, is first in some corner of your Kitchin-garden to make a bed of two or three yards square of old Oxe dung, and Horse-dung mixt together, and at least a yard or better high from the earth, then cover this bed of dung with the richest garden mould you have, better than halfe a foot thicke: then theron place your seeds halfe a foot likewise one from another, and be most sure that your seeds be hard, and sound (for any softnesse in them sheweth rottennesse) then cover them foure fingers thicke with the like mould: then within seaven or eight daies, after you shall see them appeare aboue the earth, but in any wise let them continue still till the principall leaves be come forth, and they begin to creepe out in length, then with your hand griping the whole plant, take it up by the roots with the earth, and all, and plant it in a bed new digged, and trimmed for the purpose with a rich loose mould, and so replant, and remove each root severally one after another, and they will grow, and bring forth in great plenty. Now by the way you must observe, that as soone as you have sowen your seeds you shall provide a Mat, Canuasse, or other couering, which being placed upon stakes over the dung bed shall every night after Sunne-set be spread over the same, and not taken away till the Sunne be risen in the morning, for this will defend the seeds from frosts, and other cold dewes which are very dangerous. Now if any demand why

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why theſe ſeeds are thus ſowen firſt on the bed of dung, they ſhall underſtand that beſides the warmth, and fertility thereof, that the ſeeds are ſo pleaſant, and tender, that wormes, and other creeping things in the earth will deſtroy them before they can ſprout, which this bed of dung preventeth. The moneths moſt fit for ſowing theſe ſeeds, as Aprill, May, and Iune only, for other are much to cold, and in this manner you may ſow any tender ſeed whatſoever.

Beanes of *Ægypt* delight in a moyſt watriſh ground, rather fertile than any way given to barrenneſſe, yet will plentifully enough proſper in any indifferent earth: they are rather to ſet than ſow, becauſe they muſt take ſtrong roote, and be fixed ſomewhat deepe into the earth, and the moneth which is moſt proper for them, is the latter end of Ianuary, all February, and the beginning of March only. Of the *Beanes of Ægypt.*

Skerrets are a delicate root, white, tender, and pleaſant, little differing in taſte or excellency from the *Eringo*. They delight in a rich mould, moyſt, and well broken, and muſt be ſet deepe in the earth; after they be a finger length above the ground they would be removed, and planted in a freſh mould, which will preſerve them from ſpeedy ſeeding, for when they runne to ſeed, they looſe the vertue of their roote. The moneths fitteſt for the ſowing of them, is March, Aprill, and May, and if you deſire to have them all Winter, you may than ſow them in September, and October. And thus much for Salet-hearbs, and roots, of all natures, of which kinds though there be divers other, yet you ſhall underſtand, all are to be ordred in the manner of theſe before rehearſed, that is to ſay, ſuch as have their vertues in the ſtalke or leaves, like *Spinage*, *Sparagus*, *Purſlane*, and ſuch like, thoſe which cabbadge or knit together in hard lumps, like *Lettuce*, *Colworts*, and ſuch like, and thoſe whoſe goodneſſe lives in their roots, like *Raddiſh*, *Carrets*, *Skerrets*, and ſuch like. *Of Skerrets.*

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A most necessary observation.

Now for a most necessary observation, every Gardner ought to beare this rule in his memory, that all Pot-hearbs must be sowen thicke, and but thinly covered, as namely not above three fingers: all Hearbs which cabbadge must be sowen thicke, and deeper covered, as a full handfull at least, and in their removing planted thin, and well fixt into the earth: and all roots must be sowen thin, and deepe, as almost a foot eyther set into the ground, or strewed in deepe furrowes, digged, and layd up for the purpose, in which the quantity of your seed must only direct you: for if you have occasion to sow hardly a handfull, then you may set them one by one into the ground at your leasure, but if you have occasion to sow many Pecks, or halfe Pecks, then you shall turne up your earth into deepe furrowes, and in the bottome therof scatter your seed, and after rake it into a levell, and you shall not only save much labour, but gaine your purpose.

Chap. 5.

Of Flowers of all sorts both forraine, and home-bred, their sowing, planting, and preserving.

Having written sufficiently of Pot-hearbs, and Salet-hearbs, which are the ornaments of the Husbandmans Kitchin or Table, I will here speake of flowers, which eyther for their smels, beauties, or both, are the graces of his Chamber. And first, because my maine ayme, and scope is English Husbandry, I will begin with those flowers which are most proper, and naturall for our climate, of which because I hold *Roses* both for their smell, beauties, and wholsomnesse to exceed all other, I thinke it not amisse to give them the first place, and precedency before all other.

Of *Roses*.

You shall understand then that *Roses* are generally, and

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and anciently but of three kinds, the Damaske, the red, and the white, and what are different from theſe are but derivations from them, being by grafting, replanting, and phiſicking, ſomewhat altred eyther in colour, ſmell, or doubleneſſe of leafe.

To ſpeake then firſt of the Damaske *Roſe*, it is fit that all husbandmen know, that *Roſes* may as well be ſowen from the ſeed, as planted from the root, Syen, or branch only, they are ſlower in comming up, more tender to nouriſh, and much longer in yeilding forth their flowers, yet for ſatisfaction ſake, and where neceſſity urgeth, if of force or pleaſure you muſt ſow it from the ſeed, you ſhall chuſe a ruſſiſh earth, looſe, and well dunged, and you ſhall caſt up your beds high, and narrow: the moneth which is fit for their ſowing is September, and they muſt be covered not aboue foure fingers deepe, they muſt be defended well all the winter from froſts, and ſtormes, and then they will beare their flowers plentifully all the next Spring following; yet this is to be noted, that all *Roſes* which riſe from the ſeed ſimply, their flowers will be ſingle like the *Eglantine*, or *Cyphany*, therefore after your plants are two yeeres old, you muſt graft one into another, as you doe other fruit, and that will make them double, and thicke: you muſt remember that thoſe yellow ſmall ſeeds which are in the midſt of the *Roſe*, are not true *Roſe*-ſeeds, but thoſe which lie hid in the round peare knob under the *Roſe*, which as ſoone as the leaves are fallen away, will open, and ſhew the ſeed. And thus much touching the ſowing of all ſorts of *Roſes*, which is for experience, and knowledge ſake only, for indeed the true uſe, and property of the *Roſe* is to be planted in ſhort ſlips about fourteene inches long, and the ſmall taſſels of the root cut away, they would be ſet halfe a foot into the ground, in the ſame manner as we ſet ordinary Quickſet, and of like thickneſſe, rather a little ſlope-wiſe than upright: and though ſome thinke March the beſt ſeaſon, yet doubtleſſe September is much

Of the Damaske *Roſe*.

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much better for having the roote confirmed all the Winter, they will beare the sooner, and better all the Summer following; you must be carefull to plant them in faire weather, and as neere as you can under shelter as by the sides of walls. and such like covert where the Sunne may reflect against them, and if they bee planted on open beds or borders, then you must with Poales, and other necessaries support, and hold them up, least the winde shake their roots, and hinder their growing.

Of the read *Rose*. The red *Rose* is not fully so tender as the Damaske, neyther is it so pleasant in smell, nor doubleth his leaves so often; yet it is much more Phisicall, and oftner used in medicine, it is likewise fitter to be planted then sowen, and the Earth in which it most ioyeth would be a little rough or gravelly, and the best compasse you can lay unto it, is rubbish, or the sweeping of Houses, the moneths to sowe or plant it in is March or September, and the time to prune and cut away the superfluous branches is ever the midst of October.

Of the white *Rose*. The white *Rose* is of lesse smell than the red, and will grow in a harder ground, his use is altogether in Phisicke, as for sore eyes, and such like: it will grow into a Tree of some bigge substance, and is seldome hurt with frosts, stormes, or blastings: it would likewise be planted from the roote against some high wall, eyther in the moneth of February or March, and the oftner you plant, and replant it, the doubler, and larger the Flower will bee: for the Earth it much skilleth not, because it will grow almost in every ground, only it delights most in the shadow, and would be seldome pruned, except you finde many dead branches.

Of the *Cinamon Rose*. The *Cinamon Rose*, is for the most part sowen, and not planted, whence it comes that you shall ever see the leaves single, and little, the delicacy thereof being only in the smell, which that you may have most fragrant,

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and ſtrong, you ſhall take a veſſell of Earth, being full of ſmall holes in the bottome, and ſides, and fill it with the richeſt Earth you can get, being made fine, and looſe, then take Damaske *Roſe* ſeeds which are hard, and ſound, and ſteepe them foure, and twenty houres in *Cinamon*-water, I doe not meane the diſtilled water, but faire Conduit water, in which good ſtore of *Cinamon* hath bin ſteeped, or boyled, or Milke, wherein good ſtore of *Cinamon* hath bin diſolved, and then ſow thoſe ſeeds into the Pot, and cover them almoſt three fingers deepe, then morning, and evening till they appeare above the Earth, water them with that water or Milke in which the ſeeds were ſteeped, then when they are ſprung up a handfull or more aboue the ground, you ſhall take them up mould, and all, and having dreſt a border or bed for the purpoſe, plant them ſo as they may grow up againſt ſome warme wall or pale, and have the Sunne moſt part of the day ſhining upon them, and you ſhall be ſure to have *Roſes* growing on them, whoſe ſmell will be wonderfull pleaſant, as if they had beene ſpiced with *Cinamon*, and the beſt ſeaſon of ſowing theſe is ever in March, at high noone day, the weather ſhining faire, and the winde moſt calme.

Now if you would have theſe *Roſes* to grow double, which is an Art yet hid from moſt Gardners, yet ſhall at Michaelmaſſe take the uppermoſt parts of the Plants from the firſt knot, and as you graft eyther Plumme or Apple, ſo graft one into another, and cover the heads with Earth or clay tempered with *Cinamon*-water, and they will not only grow double, but the ſmell will be much ſweeter, and looke how oft you will graft, and regraft them, ſo much more double, and double they will prove. To make the *Cinamon Roſe* grow double.

The *Province Roſe* is a delicate Flower for the eye more then the noſe, for his oft grafting abateth his ſmell, but doubleth his leafe ſo oft that it is wonderfull; therefore Of the *Province Roſe*.

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fore if you will have them large, and faire, you shall take the faireſt Damaske *Roſes* you can get, and graft them into the red *Roſe*, and when they have ſhot out many branches, then you ſhall graft each ſeverall branch againe with new grafts of another gafted Damaske *Roſe*: and thus by grafting graft upon graft, you ſhall have as faire and well coloured *Province Roſes*, as you can wiſh or deſire; and thus you may doe eyther in the Spring or fall at your pleaſure, but the fall of the leafe is ever held the beſt ſeaſon.

To make *Roſes* ſmell well. Now if your *Roſes* chaunce to looſe their ſmels, as it oft happeneth through theſe double graftings: you ſhall then plant *Garlicke*-heads at the roots of your *Roſes*, and that will bring the pleaſantneſſe of their ſent unto them againe.

Generall notes touching *Roſes*. Now for your generall obſervations, you ſhall remember that it is good to water your *Roſes* morning, and evening till they be gathered; you ſhall rather covet to plant your *Roſes* in a dry ground than a wette; you ſhall give them much ſhelter, ſtrong ſupport, and freſh dung twiſe at the leaſt every yeere, when the leafe is fallen, you ſhall cutte, and prune the branches, and when the buds appeare, you, ſhall then begin your firſt watring.

Of *Lavender*. *Lavender* is a Flower of a hot ſmell, and is more eſteemed of the plaine Country-houſe-wife then the dainty Citizen; it is very wholeſome amongſt linnen cloathes, and would be ſowen in a good rich mould, in the moneths of March or Aprill.

Of the white *Lilly*. The white *Lilly* would be ſowen in a fat Earth, in the moneths of October, and November, or in March or Aprill, and the ſeeds muſt be ſowen exceeding thinne, not one by any meanes touching another, and the mould which covereth them muſt be ſifted gently upon them.

To make *Lillies* of any colour. If you would have your *Lillies* of a purple colour, you ſhall ſteepe your ſeeds in the Lees of red wine, and that

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that will change their complection, and alſo you ſhall water the Plants with the ſame Lees likewiſe: if you will have them ſcarlet-red, you ſhall put *Vermillion* or *Cynaber* betweene the rind, and the ſmall heads growing about the root: if you would have the blew, you ſhall diſſolve *Azure* or *Byſe* betweene the rind, and the heads, if yellow *Orpment*, if greene *Verdigreaſe*, and thus of any other colour.

To make *Lilies* flouriſh all the yeere.

Now to make them flouriſh every moneth in the yeere, you ſhall ſow your ſeeds ſome a foot deepe, ſome halfe a foot, and ſome not two inches, ſo they will ſpring one after another, and flouriſh one after another.

Of the wood *Lilly*.

The wood *Lilly* or *Lilly* of the vale, delighteth moſt in a moyſt ground, and may be ſowen eyther in March or September, it is very faire to looke on, and not ſo ſuffocating in ſmell as the other *Lillyes* are.

Of the flower *de Lice*.

The *flower de Lice* is of excellent beauty, but not very pleaſant to ſmell to, it loveth a dry ground, and an eaſie mould, and is fitteſt to be ſowen in the moneth of March.

Of *Pioni*.

Pyonie or the bleſſed *Roſe*, loveth a good fat earth being ſomewhat looſe, and may be ſowen eyther in March or September, it asketh not much watring, only ſome ſupport becauſe the ſtalkes be weake.

Of *Petillius*.

Pettillius or *Indian eye*, may be ſowen in any ground, for it deſireth neither much water, nor much dung, and the beſt ſeaſon for ſowing, it is Iune or September, for it will beare flowers commonly all the Winter.

Of *Velvet* flower.

Velvet flower loveth a rich fertile ground, and muſt be much watred: the ſeaſon beſt for ſowing is Auguſt, for commonly it will beare flowers all the Winter.

Of *Gilliflowers*.

Gilliflowers are of divers kinds, as *Pinks*, *Wal-flowers*, *Carnations*, *Clove-Gilliflowers*, and a world of others, which are of all other flowers moſt ſweet, and delicate: all but the *Wal-Gilliflower* love good fertile earths, and may be ſowen either in March, Iuly, or Auguſt. They are better to be planted of ſlips than ſowen.

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yet both will prosper. They are very tender, and therefore the best planting of them is in earthen Pots, or halfe-Tubs, which at your pleasure you may remove from the shade to the Sunne, and from the roughnesse of stormes to places of shelter, they grow up high on long slender stalkes, which you must defend, and support with square cradles made of sticks, least the winde, and the waight of the flowers breake them; these *Gilliflowers* you may make of any colour you please, in such sort as is shewed you for the colouring of *Lillies*, and if you please to have them of mixt colours you may also, by grafting of contrary colours one into another: and you may with as great ease graft the *Gilliflowers* as any fruit whatsoever, by the joyning of the knots one into another, and then wrapping them about with a litte soft sleav'd silke, and covering the place close with soft red Waxe well tempered. And you shall understand that the grafting of *Gilliflowers* maketh them exceeding great, double, and most orient of colour.

Of grafting of *Gilliflowers.*

Now if you will have your *Gilliflowers* of divers smels or odours, you may also with great ease, as thus for example: if you will take two or three great Cloves, and steepe them foure, and twenty houres in Damaske *Rose* water, then take them out, and bruise them, and put them into a fine Cambricke, ragge, and so binde them about the heart root of the *Gilliflower*, neere to the setting on of the stalke, and so plant it in a fine, soft, and fretile mould, and the Flower which springeth from the same, will have so delicate a mixt smell of the Clove, and the *Rose*-water, that it will breede both delight, and wonder. If in the same manner you take a sticke of *Cinamon*, and steepe it in *Rose*-water, and then bruise it, and binde it as afore-said, all the Flowers will smell strongly of *Cinamon*: if you take two graines of fat Muske, and mixe it with two drops of Damaske *Rose*-water, and binde it as afore-said, the Flowers will smell strongly

Of the smels of *Gilliflowers.*

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ſtrongly of Muske, yet not too hot nor offenſive, by reaſon of the correction of the *Roſe*-water; and in this ſort you may doe either with *Amber-greece*, *Storax*, *Beniamin* or any other ſweet drugge whatſoever; and if in any of theſe confections before named, you ſteepe the ſeeds of your *Gilliflowers* foure and twenty houres before you ſowe them, they will take the ſame ſmels in which you ſteepe them, only they will not be ſo large or double, as thoſe which are replanted or grafted.

Now for your *Wall Gilliflower*, it delighteth in hard rubbiſh, limy, and ſtony grounds, whence it commeth that they covet moſt to grow upon walls, pavements, & ſuch like barraine places. It may be ſowen in any moneth or ſeaſon, for it is a ſeede of that hardneſſe, that it makes no difference betwixt Winter, and Summer, but will flouriſh in both equally, and beareth his Flowers all the yeere, whence it comes that the Husbandman preſerves it moſt in his Bee garden: for it is wondrous ſweet, and affordeth much honey. It would be ſowen in very ſmall quantity, for after it hath once taken roote, it will naturally of it ſelfe over-ſpread much ground, and hardly ever after be rooted out. It is of it ſelfe of ſo exceeding a ſtrong, and ſweet ſmell, that it cannot be forced to take any other, and therefore is ever preſerved in its owne nature. Of the *Wall Gilliflower.*

The *Helytropian* or Flower of the Sunne, is in nature, and colour like our Engliſh *Marigold*, only it is exceeding huge in compaſſe, for many of them will be twenty, and foure and twenty inches in compaſſe, according to the fertilenſſe of the ſoyle in which they grow, and by oft replanting of their roots, they are exceeding goodly to looke on, and pleaſant to ſmell, they open their Flowers at the riſing of the Sunne, and cloſe them againe at the Sunne ſetting, it delighteth in any ſoyle which is fertile eyther by Art or Nature, and may be ſowen in any moneth from February till September, the oft planting, and replanting of the roote after it Of the *Helytropian.*

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is sprung a handfull from the Earth, maketh it grow to the uttermost bigneſſe, it would have the East, and West open upon it, only some small Pent-House to keepe the sharpneſſe of the winde from it.

Of the *Crowne Emperiall.*

The *Crowne Emperiall*, is of all Flowers both Forraigne and home bread, the delicateſt, and strangeſt: it hath the true shape of an *Emperiall Crowne*, and will be of divers colours, according to the Art of the Gardner. In the middeſt of the Flower you shall see a round Pearle stand, in proportion, colour, and orientneſſe, like a true naturall Pearle, only it is of a soft liquid substance: This Pearle if you shake the Flower never so violently will not fall off, neyther if you let it continue never so long, will it eyther encreaſe or diminiſh in the bigneſſe, but remaineth all one: yet if with your finger you take, and wipe it away, in leſſe than an houre after you shall have another ariſe in the same place, and of the same bigneſſe. This Pearle if you taſte it upon your tongue, is pleasant, and sweet like Honey: this Flower when the Sunne ariſeth, you shall see it looke directly to the East, with the stalke bent lowe there-unto, and as the Sunne ariſeth higher and higher, so the Flower will likewiſe aſcend, and when the Sunne is come into the *Meridian* or noone poynt, which is directly over it, then will it stand upright upon the stalke, and looke directly upward, and as the Sunne declineth, so will it likewiſe decline, & at the Sunne setting looke directly to the West only. The seeds of this Flower are very tender, and therefore would be carefully sowne in a very rich, and fertile Earth well broken, and menured. The seasons moſt meete for the same, is the latter end of March, Aprill, or May, for the Flowers flouriſh moſt in May, Iune, and Iuly. As soone as it is sprung a handfull above the Earth; you shall remove it into a freſh mould, and that will make it flouriſh the braver; the roote of this Flower is like an Apple, or great flat *Onion*, and therefore in the replanting of it, you muſt be carefull to make

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make a hole large, and fitte for the same, and to fixe the mould gently, and close above the same. In the Winter it shrinketh into the Earth, and is hardly or not at all discerned, by meanes whereof I have seene divers supposing it to be dead, to digge vp the Earth, and negligently spoyle the roote, but be not you of that opinion, and in the Spring you shall see it arise, and flourish bravely.

The *Dalippo* is but a little short of the *Crowne Imperiall* in pleasantnesse, and rarenesse, for you may have them of all colours whatsoever, in such sort as was shewed you for the *Lillies*, *Gilliflowers*, and other roots: they are tender at their first springing from the seede, and therefore must be sowen in a fine rich mould, in the warmth of the Sunne, eyther in March, Aprill, or May; but after they are once sprung above the ground, they are reasonable hard, and will defend themselves against most weathers: the roote of this Flower is shaped like a Peare, with the biggest end downeward, and many small threeds at the bottome; therefore you must be sure when you remoove or replant it, to cover all the roote in fresh mould, and let not any part of the white thereof bee uncovered: this Flower by monethly replanting, you may have to flourish in all the Summer moneths of the yeere, for in the dead of Winter it shrinketh into the ground, and is hardly or not at all perceived, the stalkes of these flowers are weake, therefore to support them, and defend them from the shakings of the windes with little square frames of stickes, will be very good, and necessary, it must be oft watred. *Of the Dalippo.*

The *Hyacinth* is a Flower more delicate to the eye then nose, and is of a good strong nature, for it will endure any reasonable Earth, and may be sown in any moneth of the Spring, from the beginning of. February till midde Iune: it only hateth tempests, and stormes, and therefore is commonly sowen or planted neere unto *Of the Hyacinth.*

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walle or other shelter. You may have them of any colour you please, as is shewed before of other flowers, and in this alteration or mixture of colours their greatest glory appeareth, they will flourish all the Summer long, and if they stand warme, appeare very early in the Spring.

Of *Narcissus.* The *Narcissus* is a very curious, and dainty flower, and through his much variety, and alteration in growing, they are supposed to be of divers kinds. but it is not so; for in as much as they are seene to be of divers colours, that is but the Art of the Gardner, as is before expreſt in other flowers, and whereas some of them grow single some double, and some double upon double, you shall understand that such as grow single, grow simply from the seed only, those which are double, and no more are such as have beene planted, and replanted, the small threds of the roots being clipt away, and nothing left about it that is superfluous, and those which are double upon double, are the double plants grafted one into another. This *Narcissus* loveth a rich warme soyle, the mould being easie, and light, it may be sowne in any moneth of the Spring, and will flourish all the Summer after. Before it appeare above ground it would be oft watred, but after it skils not how little, for it will defend it selfe sufficiently.

Of the *Daffadill, Colombine,* and *Chesbole.* Not unlike unto this is your *Daffadill* of all kinds, and colours, and in the same earths, and seasons delighteth either to be sowen or planted, and will in the same manner as your *Narcissus* double, and redouble his leaves; so will your *Colombine*, your *Chesbole*, and almost any hollow flower whatsoever. Many other forraigne flowers there are which grow plentifully in our Kingdome: but the ordring of their planting, and sowing differeth nothing from these which I have already declared, being the most tender, and curious of all other, therefore I will end this Chapter with this one caution only, that when you shall receive any seed from

An excellent caution.

† Chesbole - the Poppy. Grande, rapum
sive Cattu-Cannab, fo. 244. 1631.

from any forraine Nation, you ſhall learne as neere as you can the nature of the Soyle from whence it commeth as hot, moyſt, cold, or dry it is, and then comparing it with ours, ſow it as neere as you can in the earth, and is the ſeaſons that are neereſt to the ſoyle from whence it came, as thus for example: if it came from a clime much hotter than ours, then ſhall you ſow it in ſandy mould or other mould made warme by ſtrength of meanure, in the warmeſt time of the day, and in thoſe moneths of the Spring, which are warmeſt, as Aprill or May, you ſhall let it have the Sunne freely all the day, and at night, with Mats, Penthouſe, or other defence, ſhield it from ſharpe winds, froſts, or cold dewes.

A new manner of planting flowers, and fruits;

I have ſeene divers Noblemen, and Gentlemen, which have beene very curious in theſe dainty flowers, which have made large frames of wood with boards of twenty inches deepe, ſtanding upon little round wheeles of wood, which being made ſquare or round according to the Maſters fancy, they have filled with choyce earth, ſuch as is moſt proper to the flower they would have grow, and then in them ſow their ſeeds, or fixe their Plants in ſuch ſort, as hath beene before deſcribed, and ſo placing them in ſuch open places of the Garden, where they may have the ſtrength, and violence of the Sunnes heat all the day, and the comfort of ſuch moderate ſhowers, as fall without violence or extraordinary beating, and at night draw them by mans ſtrength into ſome low vaulted gallery joyning upon the Garden, where they may ſtand warme, and ſafe from ſtormes, winds, froſts, dewes, blaſtings, and other miſchiefes which ever happen in the Sunnes abſence; and in this manner you may not only have all manner of dainty out-landiſh flowers, but alſo all ſorts of the moſt delicateſt fruits that may be, as the *Orenge, Limon, Pomgranate, Poncythron, Cinamon-tree, Olive, Almond*, or any other, from what clime ſoever it be derived, obſerving only to make your frames of wood, which con-

taines

taines your earth, but deeper, and larger, according to the fruit you plant in it, and that your Alleys through which you draw your Trees when you houſe them be ſmooth, and levell, leaſt being rough, and uneven, you jogge, and ſhake the roots with the waight of the Trees, which is dangerous. And leaſt any man may imagine this but an imaginary ſuppoſition, I can aſſure him that within ſeven miles of *London*, the experiment is to be ſeene, where all theſe fruits, and flowers with a world of others grow in two Gardens moſt abundantly. Now for ſuch flowers or fruits as ſhall be brought from a colder or more barren ground than our owne, there needeth not much curioſity in the plantation of them, becauſe a better ever bringeth forth a better encreaſe, only I would wiſh you to obſerue, to give all fruits or flowers the uttermoſt liberty of the weather, and rather to adde coolenes by ſhadow, than encreaſe any warmth by reflection, as alſo to augment ſhowers by artificiall watrings, rather then to let the root dry for want of continuall moyſture; many other notes, and obſervations there are, which to diſcover, would aske a volumne larger than I intend, and yet not to be more in true ſubſtance, than this which is already writ, if the Reader have but ſo much mother-wit, as by comparing things together, to draw the uſes from the true reaſons, and to ſhun contrary by contraries, which what Husbandman is ſo ſimple, but he can eaſily performe, and having the true grounds of experience, frame his deſcant according to his owne fancy, which is a muſicke beſt pleaſing to all men, ſince it is not in any one mans power to give a generall contentment. And thus much for flowers, and their generall, and particular ordring.

CHAP.

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Chap. 6.

How to preserve all manner of seeds, hearbs, flowers, and fruits, from all manner of noysome, and pestilent things which devoure, and hurt them.

IT is not enough to bequeath, and give your seeds unto the ground, and then immediatly to expect (without any farther industry) the fruit of your labours, no goodnesse seldome commeth with such ease: you must therefore know, that when you lay your seeds in the ground, they are like so many good men amongst a world of wicked ones, and as it were invironed, and begirt with maine Armies of enemies, from which if your care, and diligence doe not defend them, the most, if not all, will doubtlesse perish, and of these enemies the worst, and most violentest is *Thunder*, and *Lightning*, which in a moment killeth all sorts of Flowers, Plants, and Trees, even in the height, and pride of their flourishing, which to prevent, it hath beene the practise of all the ancient Gardners, to plant against the walles of their Gardens, or in the middest of their quarters, where their choysest flowers grow, the *Lawrell* or *Bay* Tree, which is ever held a defence against those strikings. Of *thunder*, and *lightning*.

Next unto *Thunder*, and *Lightning*, are *Caterpillers*, which are a kinde of filthy little wormes, which lye in Cobwebs about the leaves, devouring them, and poysoning the sap, in such sort, that the Plant dieth speedily after: the way to kill these, is to take strong Vrine, and Ashes mixt together, and with it to dash, and sprinkle all the Plants cleane over, and it will both prevent their breeding, or being bread will kill them: the smoake of Brimstone will doe the like, yet if they be exceeding much abundant, the surest way to destroy them is to take old rotten mouldy hay, and setting it on Of *caterpillers*.

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fire, with the blaze thereof burne the Cob-webs, and then with the smoake smother, and kill the wormes, and they will hardly ever breede in that place againe.

Of *Toades*, and *Froggs*. Next these are *Toades*, and *Frogges* which are very poysonous, and great destroyers of young Plants, chiefly in their first appearing above the ground, and the auncient Gardners have used to destroy them by burning the fat of a Stagge in some part of the Garden beds, from which Earth all creatures that have poyson in them, will flye with all violence: other Gardners will watch where the Kite pearcheth on nights, and gathering up her dung, scatter it upon the beds eyther simply, or mixt with the shavings of an olde Harts-horne, and no venemous thing will come neere it.

Of the field *Myce*. Next these are field *Myce*, which will roote seeds out of the Earth, and devoure them aboundantly, which to kill, you shall take *Henbane-seede*, and beate it to pouder, and then mixing it with sweet Oyle, fresh Butter, or Grease, make therof a bayte, and when you finde where they scratch or roote, lay some part of the bayte in that place, and they will greedily eate it, and it will kill them: there be other Gardners which will take a Weesell, and burning it to ashes, scatter the ashes on the beds, and then no field *Mouse* will come neere unto them.

Of *Flyes*. Next these are *Flyes*, as flesh-*Flyes*, *Scarabs*, *Hornets*, *Dores*, and such like, which are great destroyers of Seeds, and Plants, when they appeare in their first leafe, and are soft, and tender, which to destroy, you shall eyther take *Orpment* mixt with Milke, or the pouder of *Allome*, or the ashes of any of these *Flyes* burnt, and with it sprinkle your beds, and young plants all over, and it will keepe *Flyes* that they will not dare to come neere them.

Of the greene *Flye*. If the greene *Fly*, which of all other *Flyes* is most greedie to hurt Seeds, and Plants, doe offend your Garden, you

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you shall take *Henbane* leaves, *Houseleeke*, and *Mints*, and beat them in a Morter, then straine forth the juyce, and then adde thereto as much Vinegar as was of all the rest, and there-with sprinkle your beds all over, and the geeene *Fly* will never come neere them. Some hold opinion, that if you plant the hearbe *Rocket* in your Garden that it is a safe preservative against these greene *Flyes*, for it is most certaine that the very smell thereof will kill these, and most sorts of all other *Flyes* whatsoever, as hath beene found by approved experience, and the sylts of old ancient Abby Gardens, which a man shall seldome finde without this hearbe planted in them.

Next these are *Gnats*, which although it bee the smallest of all *Flyes*, yet it is the greatest, quickest, and sharpest devourer of tender Plants of all other, for it biteth deeper, and more venomously sharpe, then those which are of much bigger substance; the best way to destroy them is morning, and evening, to smoake, and perfume your beds eyther with wet *Rosemary*, or with mouldy *Hay*: some use to burne *Calamint*, and some Oxe dung, and sure all are very good, for the smoakes are very sharpe, and styfle as soone as it is received. Of *Gnatss*.

Next these are *Pismyers*, which also are very noysome unto Gardens, for they will digge up, and carry away the smaller seeds to their hills, and in short space spoyle, and deface a bed of his encrease, and the best way to destroy them, is, if you find their hill, to power hot scalding water upon them; or if upon your Garden beds you strow Ashes or Lyme, but especially that which is made of chalke, they will by no meanes come neere them, as you shall finde by experience. Of *Pismyers*.

Next these are *Moales*, which digging, and undermining the Earth, turneth up Seeds, and Plants in a confused fashion, to the utter destruction, and ruine of the Husband-mans labour, the cure whereof is Of *Moales*.

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to take them in such sort, as shall be shewed in this Booke, where I speake of Pasture grounds; but if you finde that their encrease, and continuance multiply with your labour, it shall be then good for you to plant in divers places of your Garden the Hearbe called *Palma christi*, in other places *Garlicke*, and in other places *Onyons*, and it is an assured rule that no *Moale* will come neere where they grow, for the strength, and violence of their smell, is poysonous, and deadly to those blinde vermines.

Of *Snailes*. Next these are *Snailes* of both kinds, blacke, and white, which are as much offensive to Gardens, as any other crawsing thing, for they feede of the tender leaves of plants, and of the outmost rindes of the daintiest Hearbs, or Flowers, the way to destroy them, is to sprinkle upon the beds, and other places of their aboad good store of chimney soote, which by no meanes they can endure, because it is mortall, and poysonous.

Of *Moaths*. Next these are *Moaths*, or *Moaghts*, which are very pernicious in a Garden, for they destroy both Seeds, and Plants, and there is no better or more certaine way to kill them, then by taking old horse hooses, and burning them, with the smoake thereof to perfume all the places where they abide, and it will in an instant kill them; with this smoake only you may keepe Arras hanging, Tapistry, Needle-worke, Cushions, or Carpets, or any woollen cloath, or garment whatsoever safe from *Moathes* as long as you please, neyther neede you to use it above once or twice a yeere at the most, as shall be more at large in another place declared.

Of *Cankers*. Next these are *Cankers*, which are a kinde of filthy wormes, which devoure both the great, and small leaves of all sorts of sweete Plants, especially *Lettuce*, *Cabbadge*, *Colaflowres*, and such like, and the way to destroy them, is to scatter amongst your Plant, Goose-dung, or to sprinkle the juyce thereof with a wispe of *Rue*

or

or Hearbe of *Grace* over all the beds, and though ſome with a ruſty knife uſe to ſcrape them from the leaves, and ſo kill them on a Tyle-ſhread, yet for my part I hold this the neerer way, and both more certaine, and more eaſie, as experience will approve.

Laſtly, doe your Garden *Wormes* which living in the hollowes of the Earth feede much upon your tender Garden ſeeds, and the ſoft ſprouts which firſt iſſue from them, eſpecially from all ſorts of kirnels, in which they delight more then in any other ſeede whatſoever, as you may finde by experience, if you pleaſe to obſerue accidents as they happen, without which obſervation you ſhall hardly attaine to the perfection of an excellent Gardner: for if you pleaſe to make this triall, take the kirnels of a faire ſound Pippin, and devide them into two parts, then ſow the one halfe in a Garden-bed well dreſt, and trimmed for the purpoſe, where the worme hath liberty to come, and goe at his pleaſure, ſowe the other halfe in ſome riven Boule, earthen Pot, or halfe Tub, made for the purpoſe with the ſame Earth or mould that the bed is, and then ſet the veſſell ſo as no worme may come thereunto, and you ſhall finde that all thoſe Seeds will ſprout, and come forth, when hardly any one of thoſe in the bed of Earth will or can proſper, there being no other reaſon but the extreame greedineſſe of the devouring worme, which to prevent, you ſhall take Oxe-dung, and burne it to aſhes, then mixe them with the earth where with you cover your Seeds, and it will both kill the wormes, and make the Seeds ſprout both ſooner, and ſafer. And thus much for the preſervation of Seeds, and Plants, from all noyſome, and peſtilent creatures, which being practiſed with care, and diligence, will give unto every honeſt minde the ſatiſfaction he deſireth.

Of Garden *wormes.*

An excellent experiment.

Now to conclude this ſmall tract, or Treatiſe of the Husbandmans *Kitchen Garden*, I would have every honeſt Reader underſtand, that I have not taken upon me-

The concluſion of the *Kitchen Garden.*

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me to modell out any curious shape or proportion, but only figured out a perfect nourcery, shewing you how to breed, and bring up all things fit for health or recreation, which being once brought to mature, and ripe age, you may dispose into those proper places which may become their worthinesse, in which worke I would have your owne fancy your owne directour, for I may give preheminence to that you least like, and disesteeme that most which to you may seeme most worthy, therefore let your owne judgment order your Garden, like your house, and your hearbs like your furniture, placing the best in the best places, and such as are most conspicuous, and the rest according to their dignities in more inferiour roomes, remembring that your galleries, great chambers, and lodgings of state do deserve Arras, your Hall, Wainscote, and your meanest offices some *Boscadge*, or cleanly painting; from this alligory if you can draw any wit, you may find without my farther instruction how to frame Gardens of all sorts to your owne contentment.

THE

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THE SECOND Part of the second Booke of the *English Husbandman*: Contayning the ordring of all sorts of Woods, and plashing of hedges, ordring of pastures, and the curing of Cattels diseases.

CHAP. I.

Of the beginning of Woods, first sowing, and necessary use.

IT is a Maxime held in Plantations, that no land is habitable, which hath not Wood, and Water, they two being as it were the only nerues, and strength of a mans safe, and wholsome living, and I have heard many wise Gentlemen, exercised, and engaged, in the most noble, and ever laudable workes of our new Plantations, both of *Virginia*, and the Summer-*Ilands* affirme, that they had rather, for a generall profit, have a fertile wholsome land, with much wood, than (wanting wood) with a Mine of gold: so infinite great is the use of Timber (whose particulars I need not rehearse) and so insufferable is the want, when we are any

Wood better than Gold.

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any way pinched with the same. And hence it springeth that our old ancestors (whose vertues would God we would in some small measure imitate, when they found any hard, and barren earth, such as was unapt for grasse, or at least such as bare but grasse that would keepe life, not comfort life, they presently plowed it up, and sowed thereon Acornes, Ash-keyes, Maple-knots, Beech-apples, Hawes, Slowes, Nuts, Bullis, and all other seeds of Trees in innumerable quantity, as may appeare by the Forrests of *Del la mere*, *Sherwood*, *Kings wood*, and many other within this Kingdome of huge great spaciousnesse, and compasse, from whom when the wood is spoyled, the soyle serveth to little or no purpose, except it be the keeping alive of a few poore sheepe, which yeild but little profit more than their carcasse. Thus even from the first age of the world hath our forefathers beene ever most carefull to preserue, and encrease wood, and for mine owne part I have ever observed in all those places where I have seene Woods decayed, and destroyed, that the charge of stubbing, and other necessaries allowed, those lands have never againe yeilded the former profit, for the greatest exhaustment that ever I saw of Wood ground was to bring it to ten shillings an Acre when it was converted to pasture, and being kept to wood it was worth every seaventeenth yeere one and twenty pound. A simple Auditor may cast the account of this profit, but such is our greedinesse, that for our instant use we little respect the good of ours, or our neighbours: But it is no part of my bookes method all offences to question, but only to right the Husbandman in his journey to ordinary profit.

The excellent use of Wood.

Know then that there is nothing more profitable to the Husbandman, than the encreasing, and nourishing of wood; from whence (as our common lawes tearme it) springs these three bootes or necessary commodities, to wit House-boote, Plow-boote, and Fire-boote, without the first we have neither health, covert, ease, nor safety from

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from ſavage beaſts: without the ſecond we cannot have the fruits of the earth, nor ſuſtenance for our bodies, nor without the laſt can we defend off the ſharpe Winters, or maintaine life againſt the numbing colds which would confound us. The conſideration of theſe three things only, might enduce us to the preſervation of this moſt excellent commodity: but the other infinit neceſſities, and uſes which we make of Wood, as Shipping, by which we make our ſelves Lords of the Seas: fencing which is the bond of concord amongſt neighbours: ſolution, and tryall of Mines, from whence ſprings both our glory in peace, and our ſtrength in warre, with a world of others ſutable unto them, ſhould be motives unreſiſtable to make vs with all dilligence haſt to the moſt praiſe-worthy labour of planting Wood, in every place, and corner, where it may any way conveniently be received.

If then the Husbandman ſhall live in a high barren Country (for low-valleyes, marſhes, or ſuch grounds as are ſubject to inundations, ſeldome nowriſh Wood well) or in a ſoyle though not utterly barren, yet of ſo hard, and ſlower encreaſe, that the hearbage doth in them profit but in ſmall quantity; I would wiſh him after a generall tryall of his earth, to divide it into three equall parts, the firſt, and fruitfulleſt I would have him preſerue for paſture for his Cattell of all kinds: the ſecond, and next in fertility for Corne, being no more then thoſe Cattell may till, and the laſt, and moſt barren to imploy for Wood: which though he ſtay long for the profit, yet will pay the intereſt double. And this ground thus choſen for wood, I would have him plow up from the ſwarth about the latter end of February, and if it be light earth, as eyther ſand, gravell, or a mixt hazell earth, then immediately to ſow it with Acornes, Aſh-keyes, Elme, and Maple knots, Beech-apples, Cheſnuts, Cerviſſes, Crabs, Peares, Nuts of all kinds, Hawes, Hips, Bullice, Slowes, and all manner of other Wood-ſeeds

The Plantation of *Wood.*

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whatsoever, and as soone as they are sowne, with strong Oxe harrowes of iron, to harrow, and breake the Earth, in such sort, that they may be close, and safely covered. And in the plowing of this Earth, you must diligently observe to turne up your furrowes as deepe as is possible, that the seede taking strong, and deepe roote, may the better, and with more safety encrease, and defend it selfe against stormes and tempests, whereas if the roote be but weakely fixed, the smallest blasts will shake the Trees, and make them crooked, wrythen, and for small use but fire only.

The fenceing of young *woods.*

After you have harrowed your Earth, and laide your seede safe, you shall fence your ground about with a strong, and large fence, as hedge, ditch, pale, or such like, which may keepe out all manner of foure-footed beasts, for comming within the same, for the space of ten yeeres after: for you shall understand, that if any cattell shall come where young wood is peeping above the Earth, or whilst it is young, tender, and soft, they will naturally crop, and brouse upon the same, and then be sure that the wood which is so bitten, will never prosper or spring up to any height, but turne to bushy shrubs, & ill-fauoured tufts pestring the ground without any hope of profit, whereas if it be defended, and kept safe the space of ten yeeres at the least, it will after defend it selfe, and prosper in despight of any iniury: and then after that date you may safely turne your cattell into the same, and let them grase at pleasure, and surely you shall finde it a great relieue for your young beasts, as your yearling-Haiffers, Bullocks, Colts, Fillies, and such like: for I would not wish you to let any elder Cattell come within the same, because the grasse though it be long, yet it is sower, and scowring, and by that meanes will make your Cattell for labour weake, and unhealthy, whether it be Oxe or Horse, and for milch-Kine, it will instantly dry up their milke, but for idle heilding beasts, whose profit is comming after, it will serue sufficiently.

When cattell may grase in *Springs.*

Now

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Now if the Earth whereon you sowe your wood, be a stiffe clay ground, and only barraine through the extreamity of cold, wet, or such like, as is seene in daily experience: you shall then plow up the ground at the end of Ianuary in deepe furrowes, as is before rehearsed; and then let it rest till it have received two or three good Frosts, then after those Frosts some wet, as eyther Snow or Raine, and then the next faire season after sowe it, as afore-said, and harrow it, and you shall see the mould breake, and cover most kindely, which without this baite, and order, it would not doe, then fence it as afore-said, and preserue it from Cattell for tenne yeeres after. The use of the clay ground for *Wood*.

And here is to be noted that one Oake growing upon a clay ground. is worth any five which growes upon the sand, for it is more hard, more tough, and of much longer indurance, not so apt to teare, rive, or consume, eyther with Lyme, Rubbish, or any casuall moysture; whence it comes that ever your Ship-wrights or Mill-wrights desire the clay Oake for their use, and the Ioyner the sand Oake for smoothnesse, and waynscote. And thus much for the sowing of Wood, and his generall uses. A speciall note.

Chap. 2.

The division of under-Woods, their sale, and profit.

WHosoever be a Lord or Master of much underwood, which is indeede young spring-wood of all kinds, growing thicke, and close together, eyther from the seede, as is declared in the former Chapter, or from the roots of former falles, the first being a profit begotten by himselfe, the other a right left by purchase or inheritance, and desire, as it is the duty of every vertuous husband, to make his best, and most lawfullest profit thereof, having

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not left unto him any president of former commodity. In this case you shall survay the whole circuit of your wood, with every corner, and angle there unto belonging, and then as your ability, and the quantity of your ground shall afford, you shall devide your whole wood eyther into twelue, seventeene, or one, and twenty parts of equall Acres, Roods, or Rods, and every yeere you shall sell or take to your owne use one of those parts, so that one following yeerely after another, our sales may continue time out of mind, and you shall imploy as you please so much wood every yeere of eyther twelue, seaventeene, or one and twenty yeeres growth. And in this you shall note that the sale of one and twenty, doth farre exceede that of seventeene, and that of seventeene as farre that of twelue: but in this it is quantity, and your necessity that must direct you, and not my demonstration: for there be few Husbands but know that an Acre of one, and twenty yeeres growth, may bee worth twenty, nay thirty pounds, that of seventeene worth eight or ten pounds, and that of twelue, five and sixe pounds, according to the goodnesse of the wood, insomuch that the longer a man is able to stay, the greater sure is his profit: but fewell, and fence must of necessity be bad, and if a man have but twelue acres of wood, I see not but he must be forced to take every yeere one acre for his owne relieſe, and if he take more, he must either necessarily spoyle all, or drive himselfe into extreame want in few yeeres following: and therefore it is meete that every good husband shape his garment according to his cloth, and only take plenty where plenty is; yet with this husbandly caution that ever the elder your sale is, the richer it is, as you may perceive by the well husbanded Woods of many Bishoprickes in this Land, which are not cut but at thirty yeeres growth.

The devision of *Woods.*

The valew of under-wood.

Of the sale of under-wood.

When you have made your devisions according to your quantity, you shall begin your sale at an out-side where

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where cariages may enter without impeachment to the ſprings you intend not to cut, and a pole or halfe pole according to the quantity of ground, you ſhall preſerue (being next of all to the outmoſt fence) to repaire the ring-fences of your Wood, and to ſeperate the new ſale from the ſtanding Wood: and this amongſt Woodwards is called Plaſh-pole. Then at the latter end of Ianuary you may begin to cut downe your under-wood, and ſell it eyther by acres, roodes, perches, poles, roddes, or dozens, according to the quantity of your Earth, or the ability of your buyers. And in this ſale I cannot ſet you downe any certaine price, becauſe true judgment, and the goodneſſe of your wood muſt only give you direction, things being ever valewed according to their worth, and ſubſtance, and this ſale or the cutting downe of under-wood, you may continue from the latter end of Ianuary, till middle Aprill, at which time the leaſe begins to bud forth, or ſomewhat longer if neceſſity urge you: the like you may alſo doe from the beginning of September, at which time the Leafe beginnes to ſhed till the middeſt of November.

How to cut vnder-woods.

Now for the manner of cutting downe your under-woods, although the Lawes of the Kingdome ſhew you what duty you ſhall performe therein, what Timber you ſhall preſerue, and how neere each Weaner ſhall ſtand one to another, yet I would wiſh you both for your owne, and the Common-wealths ſake to performe ſomewhat more than that to which you are by Law compelled, and therefore you ſhall give direction to your woodfallers, that when they ſhall meete with any faire, and ſtraight well growne ſapling, Oake, Elme, Aſh, or ſuch like, to preſerue them, and let them ſtand ſtill, being of ſuch fit diſtance one from another, that they may not hinder or trouble each other in their growing; and when you ſhall finde upon a cluſter many faire Plants or Saplings; you ſhall view which is the faireſt of them

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all, and it preserue only, and the rest cut away that it may prosper the better: also if you finde any faire, and well growne fruit-Trees, as Peares, Chesnuts, Serviſſes, and such like, you shall let them stand, and cleare them from the droppings of the taller trees, and you shall finde the profit make you recompence. Now for the generall cutting up of the wood, you shall cut it about sixe inches above the ground, and drawing your stroks upward, cut the wood slopewise, for that is best to hasten on the new Spring, and those Weaners or young which you preserue, and suffer to grow still, you shall prune, and trimme as you passe by them, cutting away all superfluous branches, twiggs, and young spyers, which shall grow eyther neere unto the root, or upon any part of the boale, which is fit to be preserved for Timber, and if you shall finde that the earth have by any casualty forsaken the root, and left it bare, which is hurtfull to the growth of the Tree, you shall lay fresh earth unto it, and ram the same hard, and fast about it.

The fencing of falles.

Thus when you have made an end of cutting downe your sale, and that the wood is cleansed, and carryed away, and all the loose, and scattered sticks raked up into severall heapes, and carryed away also; for it is the part of every good husband, and Woodward, not to see any wood lye, and rot upon the ground: you shall then with the underwood preserved in the Plash-pole, devide by a strong hedge this new cut downe sale from the other elder growne wood, and for ten yeeres, as before is spoken, not suffer any foure-footed beasts to come within the same; from which rule you shall learne this lesson, that it is the Woodwards duty every day to looke over all his young Springs, and if by any mischance or negligence Cattell shall happen to breake into them (as many times they doe) then shall he not only drive forth or impound such Cattell, but also survay how farre, and which Plants they have cropt, and having

The *Woodwards* duty.

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ving ſpied them, with his wood Bill, preſently cut the Plants ſo brouzed cloſe by the bottomes of the laſt ſhuts, and then they will newly put forth againe, as well as if they had never bin hindred: which done, he ſhall finde out where the Cattell brake in, and then mend the ſame, ſo well, and ſufficiently, that it may prevent the like miſchiefe. Alſo if theſe young ſprings ſhall ſtand neere unto Forreſts or elder Woods, which are full of wilde Deare, and be no purlewes belonging unto the ſame, the Woodward then ſhall never walke without a little dogge following him, with which he ſhall chaſe ſuch Deare out of his young Springs, becauſe it is to be underſtood, that the brouzing of Deare is as hurtfull to young wood, as that of any other Cattell whatſoever. And thus much touching the ordring, and government of under-woods, with their ſales, and the nouriſhing up of greater Timber.

Chap. 3.

Of High Woods, and their Plantation.

What high *Woods* are.

High Woods are thoſe which containe only Trees for Timber, and are not peſtred or imbraced with the under growth of ſmall bruſh Wood, ſuch as Hazels, white Thorne, Sallowes, and Poplar are; theſe for the moſt part conſiſt of Oakes, Aſh, Elme, Beech, Maple, and ſuch like, growing ſo remote, and ſeparate one from another, that although their tops, and branches meete, and as it were infold one within another, yet at the roots a man may walke or ride about them without trouble. Theſe high Woods had their firſt beginnings from the ſeed, as was before declared, and nouriſht from age to age amongſt the under-woods; which, when men began to want food for their breed-Cattell, and that from the ſuper-abundance

The beginning of high *Woods.*

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dance of young Woods, they found ſome might conueniently be ſpared, they forthwith inſtead of cutting downe their young Wood aboue the earth, began to digge it up by the roots, and with ſtub Axes to teare the maine ſinewes from the ground, ſo that it might not renew or encreaſe againe, and then levelling the earth, and laying it ſmooth, and plaine, to leave nothing ſtanding but the talle timber Trees, betweene which the graſſe had more liberty to grow, and Cattell more abundance to feed on, and all be not ſo long, and well able to fill the mouth, as that which grows in the thicke ſprings, yet much more ſweet, and better able to nowriſh any thing that ſhall graſe upon the ſame, by reaſon that the Sunne, and Froſts having more free power to enter into the ground, the earth is ſo much the better ſeaſoned, and bringeth forth her encreaſe with more ſweetneſſe.

The Plantation of high *Woods.*

Some are of opinion, that theſe high Woods may as well be planted as ſowen, and that many of them from the firſt beginning have beene ſo, to which opinion I conſent in part: for doubtleſſe I am perſwaded, that many ſmall Groves of Aſh, Elme, Beech, and Poplar have beene planted, for we ſee in our daily experience, and the new walkes in *More-fields* by *London*, are a perfect teſtimony, that ſuch Plantations may be without trouble or danger; but for the Oake to be taken up, and replanted, is very hard, and very ſeldome in uſe, neither ſhall a man in an whole age ſee any Oake removed come to perfection or goodneſſe, but grow crooked, knotty, and at the beſt, but for the uſe of fewell only: but for the other before rehearſed, you may remove them when they are a dozen yeeres of age, and plant them where you pleaſe: and if the earth have in it any goodneſſe at all, they will take root, and grow both ſpeedily, and plentifully. And ſince I am thus farre entred into the plantation of Woods, I will ſhew you how you ſhall plant, and remove every Tree in his due manner, and ſeaſon.

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And firſt for the planting of the Elme, which is an excellent Tree for ſhadow, and the adorning of walkes or dwelling houſes, you ſhall make choyce of thoſe Plants which are ſtraighteſt, ſoundeſt, the barke even, and unwound, and at leaſt eighteene or twenty inches in compaſſe: theſe you ſhall digge out of the ground, root, and all, then at the top of the head, about three fingers under the knot, where the maine armes ſeverally iſſue forth, you ſhall a little ſlope-wiſe cut the head cleane off them, and mixing clay, and a little horſe-dung, or fine aſhes together, cover the head round about therewith, then over the ſame wrap Moſſe, or fine Hay, and binde it about with ſoft cloven Oziers, or ſome ſuch like bands, then with a ſharpe pruning Bill cut euery ſeverall branch of the root within a finger or two of the ſtocke: which done, and the root pickt cleane, you ſhall make a hole to be digged in the place, where you meane to plant the Elme juſt of that depth, the hole was from whence you digged out the Elme, that ſo much, and no more of the Elme may be hidden in the earth, then was formerly at his removing; and this hole you ſhall make ſpacious, and eaſie, and that the mould be ſoft, and looſe both underneath, and round about the root of the Elme, which done, you ſhall place your Elme in the ſame, ſtraight, and upright, without eyther ſwaruing one way or other, which for your better certainty, you may prove eyther with plumbe, levell, or other inſtrument, which being perfected, you ſhall with rich freſh mould well mixt with old meanure, cover, and ram the ſame faſt in the earth, in ſuch ſort, that no reaſonable ſtrength may move or ſhake it: and all this worke muſt be done in the encreaſe of the Moone, eyther in the moneth of October, or the latter end of Ianuary: but the latter end of Ianuary is ever held the beſt, and ſafeſt, for there is no queſtion but you ſhall ſee flouriſhing Trees the next Summer after: and in this ſort you may like- The Planting of *Elme.*

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wise remove eyther Beech, Witche, or Popler, bestowing them eyther in Groves, Walkes, Hedgerowes, or other places of shadow, as shall seeme best to your contentment: for their natures being alike, their growths, and flourishings have little difference.

Of plantting the *Ash.*

Now for the replantting or removing the Ash, though not much, yet there is some difference, for it is not at the first so speedy a putter forth, and flourisher, as the others be: but for the first yeere laboureth more to bestow, and fixe his root in the earth, then to spread forth his upper branches, and although some Woodwards are of opinion, that so much as the Ash is above ground, so much he will be under before hee begin to flourish outwardly, yet experience doth finde it erroneous, for though it be for the first yeere a little slower then other Trees, yet when it beginneth to flourish, it will overtake the speediest grower. Therefore when you doe intend to plant Ashes for a speedy profit, you shall not according to the old custome chuse the smooth, small, long Plants, which are hardly three inches in compasse, and have put out hardly any branches, and are such as grow from the roots of elder Ashes cut downe before, which our ancient Wood-wards have used to slip or cleane from those roots, no, these are the worst sorts of Plants: but you shall take the true ground-Ash, which springeth from his owne proper root, being smooth, even, sound, and straight, without bruise, canker, or other impediment. This you shall digge up by the root, being as is before sayd almost twenty inches in compasse, and having cleansed the roote, you shall leave each spray not above halfe a foot, or eight inches in length: but for the small threds or tassels of the root, those you shall cut cleane away close by the Wood, and so plant it in every poynt, as was shewed you for the plantting of the Elme, only the top thereof you

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you shall by no meanes cut off, because it is a Tree of pith, which to devide or lay bare, were very dangerous; and the best season for the planting of this Tree, is ever in the encrease of the Moone, at the fall of the leafe, which is from the beginning of October till midde November, and at no other time, for it would ever have a whole Winter to fasten his roote, and to gather strength, that it may bud forth his leafe the Summer following. Thus you see how you may plant Groves or Copses at your pleasure, and make unto your selfe high Woods according to your owne pleasure. But you will object unto me, that you live in such a champaine Country, that albe these Plantations might breed unto you infinite pleasure, yet the poverty thereof in Wood is such, that these Plants are not there to be found for any money. To which I thus answere, That in this Kingdome there is not any Country so barren, or farre off remote from Wood, being a soyle fit to receive Wood: But his next neighbour-Country is able to furnish him, especially with these Plants at an easie reckoning: as for example, I hold *Northampton-shire* one of the barrenneſt for Wood, yet best able to beare Wood, and hath not he his neighbour *Huntington-shire*, and *Leicester-shire* about him, where nurceries of these Plants are bred, and preserved for the sale only? Nay, even in *Holland* in *Lincolne-shire*, which is the lowest of all Countries, and most unlikely to hold such a commodity, I have seene as goodly Timber as in any Forrest, or Chase of this Kingdome, and thus much for the planting of high Woods.

Obiection.

Answer.

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CHAP. 4.

Of the preseruation, and sale of high Woods

IT is not sufficient for the Husbandman to sow, plant, and encrease wood about his grounds, converting his Earth to the uttermost, and extremest profit that may spring from the same: but he must also be diligent to preserue, and nourish his timber Trees from all inconveniences that may any way annoy or afflict them: and to this end he shall daily walke into his VVoods, and with a searching eye suruay every Tree which is of any account, and see if he can finde any fault or annoyance about the same, & if casting his eye up to the top, where the maine armes shoote forth themselues, he perceiue that by the breaking off some arme or other riuen Boughes, the wet, and droppings of the Leaues is sunke, and fretted into the Timber, which in time will corrupt the heart, and make the Tree hollow. In this case he shall presently mount the Tree, and with his Bill, eyther cut the place so smooth that the wet may not rest thereon, or else hauing smoothed it so much as he may with conuenience, mixe stiffe Clay, and fine Hay together, and with the same couer the place, in such manner, that it may put off the wet till it haue recouered new Barke.

Of Trees which take wet inwardly.

Of Barke-bound.

If hee shall perceiue any of his younger Trees to *Barke-bound*, that is, so stiffe, and straitly tied within their owne rynds, that they cannot encrease or prosper; in this case he shall with a sharpe drawing knife, made in the proportion of a narrow *C* draw, and open the barke euen from the top of the Bole of the Tree downe to the roote, and then clap Oxe-dung into those slits, let the Tree rest, and in short space you shall see it mightily encrease.

Of Hornets, and Dores.

If he shall perceiue that *Hornets*, *Dores*, or such like

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like have found some little hollownesse in one of his Trees, and seeketh there to shelter, and hide themselves: which in little space they will soone make larger, he shall forthwith besmeare all the place with Tarre, and Goose dung, and it will drive them thence.

If hee shall finde that by the droppings of other Trees, some of his Trees shall grow cankerous, and loose their barke, which is an accident very usuall, and the Trees whose barks are so soft, will with great difficulty after prosper. In this case he shall annoynt the place with Tarre, and Oyle mixt together, and then cover the place with Clay, where the barke is wanting. Of the *canker*.

If hee shall perceive any *Pismyer* hilles or beds to be made against any of his Trees, which is very noysome, for they are great destroyers of the barks of Trees: he shall then with hot scalding water kill them, and throw the hill downe levell, and plaine with the Earth. Of *Pismyers*.

If he shall finde any *Ivy*, *Woodbine*, or *Misseltoe* to grow in or about any of his principall Trees, which doe strangle, suffocate, and keepe them from encreasing, he shall forthwith digge up the roots thereof, and then cut it away or loosen it from about the barks of the Trees. Of *Ivy*, *Woodbine*, and *Misseltoe*.

Lastly, if hee shall perceive that by *Thunder*, *Lightning*, or other planetarie strookes, any of the armes of his well growne Trees be blasted or slaine, he shall forthwith cut them away, even close to the quicke Wood, and make the place smooth, and even where they were joyned: thus shall the carefull Husbandman with a vigilant eye, regard every enormous, and hurtfull thing that may offend his Timber, and by that meanes possesse more benefit from a few Roodes, then others doe from many Acres. Of *Thunder*, and *Lightning*.

Now when eyther necessity or the urgent occasi- Of the sale of tall *Woods*.

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ons of any needfull vſe enforceth a Husbandman to make ſale of any part of his tall Wood, in which Marchandiſe there is many pretty, and obſcure ecrets, ſuch as are hard to be ſhewed by any Verball demonſtration, for truly there is not any trucking or marting whatſoever, in which a man may ſooner deceive, or be deceived, men buying, and ſelling, in a manner hoodwinkt: for it is moſt certaine that no man can certainely tell eyther what penyworth he ſelleth, or the other buyeth, ſo long as the Tree is ſtanding. there be in Trees, ſo many ſecret faults, and likewiſe when they are downe, and come to the breaking or burkning (as the Woodman tearmes it) ſo many unexpected vertues, as for mine owne part I have often ſeene a Tree whoſe outſide hath promiſed all good hope, the barke being ſmooth, and even, the body large, and great, and the armes high ſet on, and ſpaciouſly extended; yet when this Tree hath beene felled, and came to burkning, there hath beene found a hole in the top, which hath runne cleane thorow the heart, and utterly ſpoyled the whole Timber: ſo likewiſe on the contrary part I have ſeene a Tree very foule at the top, which is ſuſpitious for rotteneſſe, whoſe armes have growne ſo cloſe, and narrow together, that they have promiſed little burthen, yet being cut downe, I have ſeene that Tree paſſing ſound, the armes double the loads in valuation, and the price being leſſe then any, the prooſe, and goodneſſe to exceed all, ſo that I muſt conclude it all together impoſſible to ſet downe any fixed, or certaine rules eyther for the buyer or ſeller: but for as much as there are divers worthy obſeruances for both parts, and that it is as neceſſary to buy well as ſell well, I will runne through every particular obſervation, which doth belong both to the one, and the other party, with which when a mans mind is perfectly acquainted he may with much bolder confidence adventure to buy or ſell in the open Market.

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The first thing therefore that eyther buyer or seller should be skilfull in, is the choyce of all sorts of Timbers, and to know which is fit for every severall purpose, the crooked, and uneven being for some uses of much higher price, and reckoning then that which is plaine, straight, and even growne, as thus for example. How to chuse Timber.

If you would buy Timber for Mill-wheeles, the heads of round Turrets, or any kind of worke whatsoever, you shall chuse that which is crooked, and somewhat bent, being sound, firme, and unshaken. Of *Mill-Timber.*

If you will chuse Timber for Summer-Trees, Baulks, Iawmes, or Tracens, you shall chuse that which is most harty, sound, and much twound, or as it were writhen about, which you shall with great ease perceive by the twinding or crooked going about of the barke, the graine whereof will as it were circle, and lap round about the Tree. This Timber which is thus twound or writhen, will by no meanes rive or cleave assunder, and therefore is esteemed the best to support, and beare burthen, and the heart thereof will endure, and last the longest. *Timber* to beare burthen.

If you will chuse Timber for Pales, Singles, Coopers-ware, Wainscote, or such like, then you shall ever chuse that which is smooth, even, and straight growne, without any manner of twinding of shaking, which you shall perceive by the straight, and even growing up of the barke whose crests will ascend straight, and upright, even from the root to the top which is an assured token that all such Timber will shiver, and ryue into as thinne parts as a man would desire. *Timber for Pales, Wainscote, &c.*

Lastly, if you would chuse Timber to make Pyles of, to drive into the earth, for the framing of Weares within the water, the heads of Ponds, or any other worke within the water, then you shall chuse that which is most knotty (so it be sound) for that will drive without splitting, and continue in the earth the longest, and *Timber for Pyles, or Water-workes.*

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and of all Timbers the Elme is accounted the best for this purpose, for it will continue almost everlastingly in the Earth without rotting; yet notwithstanding, the Oake is excellent good also: and thus much for the generall choise of Oakes.

Vse of the *Elme.*

Now if you would chuse Timber for weather-boards, or to bee used in water-workes, to make Planks for low moist Vaults, then you shall chuse the biggest, soundest, and smoothest growne *Elme*, it is also excellent good to make Kitchen tables of, or for boards for the use of Butchers. If you will chuse the most principallest Timber, for Cart or Waine Axel-Trees, for the naves of wheeles, or for any other use of toughnesse, you shall chuse the *Elme* only, for it exceedeth all other Timbers; and though some Husbandmen are of opinion, that the *Elme* Axel-Tree when it is throughly heated, is then most apt to breake, they are much deceived, for it will endure farre beyond Ash or any other Timber, except Yewgh, which for the scarsity is now of little use in such a purpose. And herein you must obserue, that the *Elme* which you chuse for Axel-Trees must be straite, smooth, and without knots, but that which you chuse for naves, must be most knotty, twound, and the hardest to be broken or hewed asunder.

Vse of the *Ash.*

If you will chuse Timber for Ploughes, or ordinary Axel-Trees (for those of *Elme* are speciall) the rings of wheeles, harrow bulls, and such like, then you shall chuse the fairest, straighest, biggest, and smoothest growne Ashs that you can finde, and from the roote end upward, you shall cut out a length of Axel-Trees, above it a length of shelbords, and above it (if the Tree be so large) a length for heads, and Skeaths; the largest which are somewhat bending, you shall elect for rings for wheeles, and so according to the bigneese of the Ash, and as your eye can proportion out what will be made of the same, you shall make valuation thereof.

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If you would chuſe Timber for joyned Tables, Cubbords, or Bedſteds, you ſhall then make choyſe of the faireſt Walnut-tree you can finde, being old, ſtraight, unknotted, and of a high boale: and although either Oake or Aſh will reaſonably well ſerue for this purpoſe, yet the Walnut-tree is by many degrees the beſt of all other, for it is of ſmootheſt graine, and to the eye moſt beautifull, provided that by no meanes you put it into any worke, before it be exceedingly well ſeaſoned. *Vſe of the Wall-nut-tree.*

If you would chuſe Timber for Ioynt-ſtooles, Chaires, or Cheſts, you ſhall then chuſe the oldeſt Peare-tree ſo it be ſound, for it is both ſmooth, ſweet, and delicate, and though it be a very ſoft Wood, yet in any of theſe frames it is an exceeding long laſter, and the heart thereof will never breed worme, nor will it in any time looſe the colour. *Vſe of the Peare-tree.*

If you would chuſe Timber for Trenchers, Diſhes, or any Tourners ware, or for any in-laying worke, you ſhall then make choyſe of the faireſt, and ſounde ſt Maple, being ſmooth, and unknotted, for it is the plaineſt graine, and the whiteſt Wood of all other: and although eyther the Beech or Poplar will reaſonably well ſerue for theſe purpoſes, yet is neither the colours ſo good, nor the Timber ſo long laſting. Many other Trees there are which may ſerve for many other purpoſes: but theſe are of moſt uſe for our Engliſh Husbandman, and will ſufficiently ſerue to paſſe through all his buſineſſes. *Vſe of the Maple, Beech, and Poplar.*

Touching Char-coale, you ſhall underſtand, that Oake, Elme, and Aſh, make your longeſt, and beſt enduring Coale: the Birtch the fineſt, and brighteſt Coale, and the Beech or Sallow the ſwifteſt Coale. Now for your ſmall Coale, the twigges of the Birtch makes that which kindles the ſooneſt, and the white-Thorne that which endures the longeſt. *Of Charcole.*

Thus when you know how to chuſe every ſeverall *How to value Timber.*

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Tree, and the true use, and profit which can any way be made of the same, and by a practised experience can cast by the survay, and view of a standing Wood, the almost entire profit that may arise from the same, devidíng in your memory how many are for every severall purpose, and to what reckoning they may amount one with the other, and blemishing (if you buy) the good with the bad, or making good (if you sell) the bad with those good ones which grow neere them, you may then boldly venture into any sale either as buyer or seller at your pleasure, and sure if you know (as it is fit you should doe) the Marketable prices of all sorts of Timbers in those places, where you are either to buy or sell, as what a Mill-post is worth, what so many inches of well squared Timber, contayning so many foot in length, what a dozen of boards of such a size, what so many naves, spoakes, rings, sparrs, or tracens, or what so much sound, and good Plough Timber is worth, and then looking upon a Tree, and computing what may every way be made of the same, allowing the waste which will hardly sometimes defray the charge of breaking up the Tree, you cannot but with great ease draw into your minde the true value of every Tree, and the uttermost profit or losse may any way rise from the same.

How to measure *Timber* by geese.

And in this worke I would have you to observe this rule very carefully, that is, when you come to any great Timber-Tree, to fathome or embrace it about with both your armes, and then knowing what quantity your fathome is, and how many fathome girdleth the Tree round about, you may from former experience give a certaine geese what inches of squared Timber that Tree will beare, for if you have found in former trials that twice your fathome in the rough barke hath borne twenty, or two and twenty inches squared, and now finde that the present Tree on which you looke, is no lesse, but rather with the bigger, you may boldly presume, that being sound, this Tree can carry

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no leſſe ſquare of good Timber: and thus much for the knowledge, and choiſe of tall Woods.

Now to come to the ſeaſons, and fitteſt times for ſale of theſe high Woods: you ſhall underſtand that it is meete for every good husband which intendeth to ſell any of his high Woods, to walke into the ſame immediately after Chriſtmas, and whether they be in woods, Groves, hedge-rowes, or other places, to marke with a ſpeciall marke all thoſe Trees which he intendeth to ſell, as well for the weeding, and cleanſing out of all ſuch as are decayed, and waſted, as alſo to know the true number of both the good, and bad, and thereby in ſome meaſure to compute the profit which will ariſe from the ſame, for to make ſale of them otherwiſe confuſedly, might bring much loſſe to a man, happily ſelling away thoſe that would encreaſe their valews, and keepeing them which daily would deſcreaſe their goodneſſe, or ſo unorderly unmixing his Wood, that where one faire, and good Tree would draw a mans eye from beholding divers which are doated, now that only taken away, the reſt will remaine, and neuer be ſale-able, and therefore ever as neere as you can ſo ſuite, and match your Trees together, that in your ſales you may never paſſe away an abſolute worthy Tree, but you may ever couple ſome which have defects to goe with it, as in theſe dayes we ſee Warriners, and Poulters ſell Rabbets, a fat, and a leane ever coupled together. VVhen you have thus marked out what you meane to ſell, and diſpoſed your ſale according to your beſt profit, after notice given unto the Country in the Market Townes neere adjoyning, you ſhall begin your ſale the Candlemaſſe following, which ſale you may continue all the Spring, according to the greatneſſe thereof, or the quickneſſe of buyers. Now for any rules or orders to be obſerued in theſe ſales, I can preſcribe you none certaine, becauſe it is meete that every one binde himſelfe to the cuſtoms of the Country in which he liveth, whoſe variations are divers,

Beſt reaſons for the ſale.

The time for Chap-men.

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for almost every one is severall, only in the maine they hold together, which is that they seldome make publike sales for money downe upon the head, but for a certaine payment some few moneths after, which makes the Merchandise more lookt to, and the sales goe away the faster: and in this the Sales-man must be circumspect in the choise of his Chap-men, and where he findeth any doubt there to make one neighbour stand bound for another: as for the earnest penny it is ever over, and above the price, and must be laid downe at the binding up of the bargaine, which earnest is in some Countries foure pence in the pound, in some eight pence, and in some twelue pence, according to the goodnesse of the Timber, and hath ever beene taken for a fee due to the Sales-man for his paines, and attendance, and sure if he be carefully honest, it is a merrit well bestowed: if otherwise, it is much too much for falshood, for in him consists the owners losse or profit, and therefore it may become any man, of what place so ever, to take a strickt account from such an officer: or if he have any doubt, ever to ioyne with him in commission, another of contrary faction.

When to cut downe *Timber*.

When you have made sale of your Timber, you shall by no meanes let it be cut downe till the end of Aprill, at which time the sap ascending upward, will loosen the barke, and make it come from the body of the Tree easily. You shall cut your Timber downe close by the Earth, not digge it up by the roots, unlesse you meane utterly to destroy it, for from the spurnes of the roote will arise new Spiers, which in processe of time, will come to another Tree. As soone as you have felled your Oakes, you shall with your Axe immediately whilst the sap is wet, take all the barke from the body, and the armes, and setting it end-wayes up one by another, so place it, that the winde may passe thorow it, and dry it, and then sell it to the Tanners, which will give you a good price for it, according to the worth, and

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and ſcarſity therof. When your trees are barkt, you ſhall then ſawe the body into ſuch lengths of Timber, as ſhall be meet for the purpoſe for which it is bought, or in ſuch ſort as it may be beſt profitable: the armes alſo you ſhall hew from the body, and ſo burken or breake them up, as they may be fit to be loaded: all which done, and the Timber carryed away, you ſhall if you intend to have the Wood renew, fence in the ſale, and keepe it ſafe from Cattell; and thus much for the preſervation, and ſale of high Woods.

Chap. 5.

Of the breeding of Wood, in rich champaine ſoyles.

NAture which is the moſt perfect workemiſtris of all things (as all the Philoſophers ſay) but I ſay our good God out of his moſt divine wiſedome, hath allotted to every ſoyle, if we note it, through the whole courſe of this Kingdome, particular profit to ſuſtaine, and maintaine it, as to ſome Mines, to ſome Timber, and to ſome fertility of Graſſe, and Corne, and where any one of theſe are, there commonly ſome of the other is ever wanting, as we ſee daily in our experience; and for as much as in the fruitfull, and fertile ſoyles of this Land, of which we eſteeme the wealthy Vales, as that of *Eſſam*, *White-horſe*, *Beluoire*, and many others the beſt, there is ever great ſcarſity of Wood, the very wealthineſſe of the ſoyle it ſelfe almoſt denying to beare ſuch burthen, becauſe for the moſt part the ſtiffneſſe of thoſe Clayes is contrary to their growth, yet for as much as the neceſsity, and uſe of Wood is ſo great, and valuable, I would perſwade every good, and worthy Husbandman, to endeavour himſelfe with all his utmoſt power, and ſtrength, to plant Wood

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in every convenient place round about him, and not to take the rules of the ignorant for his lesson, that sith never any did grow there, therefore never any will grow there; for it is absurd, and foolish; nor to say because my ancestors have never done it why should I attempt it? These arguments are made from a false figure, and the Husbandman must remember that his duty is industry, and encrease not altogether imitation, and president, and he must as seriously finde out new, and neerer profits, as hold those he hath learned; and therefore he shall endeavour by all commendable labour to have ever about him whatsoever is necessary for his use; but you will peradventure answere me, that to plant Woods in these rich soyles, were very much losse, because the fertility thereof will yeild a much better profit. To this I reply, that I would not have you plant any spacious piece of grounnd with Wood, but only your ditches, hedges, and such waste earths, as almost deny any other profit, and that the want of Wood in those places may not discourage you, to imagine that Wood will not grow there. Doe but view the cytes of every Towne in those rich Countries, the seats of Noblemen, and Gentlemens houses, and the Parks which commonly are adjoyning thereunto, and you shall hardly see any of them without the fellowship, and aequaintance of some Wood, which in times past hath beene planted eyther for defence or pleasure, and from thence collect that if Wood will grow with my next neighbour, then why not with me, so long as the soyle doth not alter? But *Labor vincit omnia improbus*, True industry was never fruitlesse. Then for the generall good both of your selfe, and your neighbours, looke that you repleniſh all your ditches, and ring fences, with good store of Quick-set that is to say, all that lye high, and out of the danger of water with white-Thorne, black-Thorne, and Bryer, and those which are low, and subiect to washing

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ing, with Willowes, Sallowes, and Ozyers.

How to set all sorts of Quick-set.

Now for as much as it is not enough to say unto the Husbandman doe this, but that I must also shew the manner of doing thereof: I will shew you briefly how to set all manner of Quick-sets, and first for the white-Thorne, black-Thorne, Bryer, or such like, which must stand free from inundation, you shall when you enclose any peece of ground, after you have markt out the true breadth of your dyke upon the inside thereof, and close by the verdge of the dyke, cut with your spade a little trough, halfe a foot or there-abouts in breadth, and depth, in which trough or small gutter, you shall lay the roots of the first row of your Quick-sets, so as the top ends may looke upward, and little bend in towards the ditch, and these Quick-sets you shall place within lesse then a foot one of another; then with your spade beginning to make your ditch, you shall with the first cleane mould, cover all the roots close, and fast, so as they will not shake nor stirre with your hand, then having raised the banke of your dyke, and covered the lowest row of Quick-set more then halfe a foot, and broken the earth so, as it may lie close, and handsome together: you shall then after the same manner lay another row of Quick-set over the first, I meane not one Quick-set directly over another, but the second row placed as it were in the midst betweene two of the first, though at least halfe a foot higher; then you shall cover that row like the former, and over it place a third, which shall stand directly opposite, and over the first, so that in their growth the middle row shall as it were grow betweene two of the lowest, and two of the highest: and then upon this uppermost row lay the remainder of your earth, and make your barke perfect, and in this sort finishing one yard of the ditch after another, you shall at length bring your labour to the end of your desire. Now in this labour you are to observe some speciall things, as first to looke well upon your Sets before you put them into

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into the ground, and be sure that they be greene, young, and untainted, then that the roots be cleane, and no small threeds or jagges hanging about them. And lastly, that they stand upright, and not above foure or five inches without the earth the at most, then shall you looke well to the making of your banke, and lay the earth so as it may not slip or fall backe into the Dyke, so as the raine may not wash away the mould, and leave the roots bare: but let all things be done strongly, and artificially. The best seasons for this worke is the moneths of February, March, and Aprill, or September, October, and some part of November: if the weather be dry above head. When you have set your Quick-set, you shall make a dead hedge upon the top of the new banke, to keepe those Cattell which are within your ground from breaking forth or hurting the Quick-set, and another small fence on the low verdge of the dyke which is outward, to keepe those Cattell which grase without from running into the dyke, and hurting the Quick-set. Now after a spring, and fall is past, you shall survay all your Quick-set, and weede it cleane from all manner of filthynesse that doth choake or stifle it, and scratching the fresh mould about it give comfort to the roots: then if you perceive that any of your Sets be dead, you shall plucke them up, and place new in the roome, and if any be blasted in part, and not cleane killed, you shall cut away so much as is blasted, and let the rest remaine, you shall looke well to the Caterpiller, and other wormes which mightily devoure Quick-sets, especially in these fat Countries, and if you finde any taint of them, destroy them as is shewed you in a former Chapter.

Planting of greater Trees.

After your Quick-set is come to the age of three yeeres, and that the banke is setled, and swarth growne thereon, you shall then within the body of your hedges plant all manner of great Trees, as Ash, Beech,

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Mable, and such like, and also all manner of fruit-Trees, as Apples, Peares, Plums, Wardens, and such like, and in the first three yeeres be very carefull to preserue each in his true proper nature, and doe to them all the rights which is due to their growth, and in that time obserue which kind of Trees in the generallity prospereth best, and agreeth most naturally with the soyle. And of those Trees see that you furnish your grounds most plentifully, the particular manner of planting whereof is already formerly declared. And hence doth *Kent*, and *Worcester*-shire boast of their fruit, *Windsor*, *Sherwood*, and *Hollam*-shire their Oakes, and other particular Countries there particular commodities.

Now for the setting of Willow, Sallow, and Oziers, it is a thing so usuall, and common, that it needeth no great art in the relation, yet because I would be loath that any omission should be taken for negligence. you shall understand that in setting them you must first respect the place, which would ever be low, and moyst, the water sometimes washing them, sometimes cooling them, and ever giving them comfort. Now to speake first of the Willow, it would be ever planted upon banks, where it may stand more dry then wet, for such prosper best, and endure longest, as for proofe, some will continue twelue, fifteene, nay one and twenty yeeres, where as those which are set close by the water, will hardly endure seven, but not above nine yeeres at the most. Touching their planting, they be set two manner of waies, but which is the best, is not yet agreed on amongst Husbandmen. The first is to take an Augure full as large in compasse (though much shorter) as that wherewith you bore Pumps, and with it bore a hole in the earth two foot, and a halfe deepe, then having headed some of the choysest Willowes you have, take the faireſt, and straighteſt of those lops, and then cutting them slopewise at both ends, and

Of the setting of Willowes, &c.

leaving no superfluous twigs cleaving thereby unto, put the bigger end downe very hard into the Earth, and then with the mould which came forth, with the Augure ram the Earth close, and hard about the Set, so as no reasonable strength may shake it. Now there be other Husbandmen which in steed of the Augure take only an Oaken or Ash stake, of the bignesse of an usuall set, and with a Beetell drive it into the ground two foot, and a halfe, and then by shaking, and opening the Earth, pull it out againe: then put in the Set as is before shewed, and beate, and tread the Earth close thereunto, and there is no doubt of the well prospering thereof. Now for the defects which Husbandmen finde in these two severall plantings. Some say, that the Augure taketh out so much Earth, that the Set cannot but stand loose at the roote, and so wanting full hold of the Earth, eyther takes not at all, or continues but a little space. Others say that the driving in of the stake beats the Earth so hard together, that it withstandeth the passage of the tender sprouts, and so killeth the set, but both are deceived: for these are suppositions, and experience daily shewes us, that these are the best, and speediest ways of setting of all sorts of Willowes that ever any time brought forth, and I have knowne one man set this way two hundreth Sets in a day, of which not one hath failed, but all prospered. Now for your Sallowes, you shall set them, and chuse the Sets in all poynts as you doe the Willow, only they would be placed a little neerer the water, for they delight somewhat more in moysture, as for the Ozyer it would be set like other Quick-set in the side of bankes, so as it may almost touch the water, and as your Willows or Sallows would be set a little remote one from another, as namely tenne foote asunder: so these must be set close together, and in thicke rowes one against another; and these Ozyer Plants, you must cut from their head, being the principall spiers, which

grow

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grow thereon, and then cut off their tops, leaving them not aboue two foote long at the moſt, and of all other they are the quickeſt in growing.

And although Willow, Sallow, and Ozyer, are in our lawes eſteemed but as weeds, and no Woods, yet they be ſo profitable, that the Husbandman can hardly miſſe them, the Willow and Sallow, ſerving for fence, and fewell, to make Harrows, Cart-ſaddles, and Horſe Hams, and the Ozyers, for fiſh Leapes, or Weeles, for Baskets, Scuttles, Fans to winnow with, and many other things full as neceſſary: therefore if you have any mariſh grounds that are vſeleſſe, bogge-myers, or Ilands in great Riuers, let them be imployed to the nouriſhing of theſe profitable weeds, and by making draynes thorow them to give the water paſſage, you ſhall in ſmall time bring them to earths of great profit, which conſideration where it rightly wayed, there would not be halfe ſo much waſt ground as is in this Kingdome. The vſe of *willowes, Sallowes*, and *Ozyers.*

But to my purpoſe, when you have planted theſe VVillows, you ſhall after every flood, ſee if the water have driuen any of them awry, or diſplaſe them, and immediately mend them, and ſet them up ſtraight againe. If any Cattell ſhall pill or barke them, you ſhall pull up ſuch Settes, and place new in their roome. Your VVillow ſet would by no meanes be too long at the firſt ſetting; for then it will never beare a good head, and too ſhort is likewiſe as vnprofitable, therefore it is held to be five foot above the Earth, is a length ſufficient: you may head your VVillowes once in three yeeres, or five at the fartheſt, and when you ſee the bodies wax hollow, you may cut them downe for the fire, and fixe new Sets in their places. Ordring of the *Willow.*

The Ozyer to come to his true profit, and ſeaſon, asketh much pruning, and trimming, as namely you muſt keepe the ſtocke low, and never above halfe a foot above the Earth, you muſt picke them cleane from Moſſe, Ordring of *Ozyer.*

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and from the slime, and filth, which the over-flow of the water will leave upon them : you shall prune the small spiers, and make them grow single one by another, and if any shoot out a double stalke, you shall cut it away, you may head them every second yeere, at the fall only, and though some head them once a yeere, yet it is not so good husbandry, nor will the *Ozyer* be so tough or long lasting. The best seasons for the setting of the *Willow*, *Sallow*, or *Ozier* is, either any part of the Spring or Fall, and the best time to loppe the *Willow* or *Sallow*, is in the Spring for fence, and in the Fall for Timber or Fewell : but the *Ozier* would be cut at the Fall of the Leafe only. And thus much for the breeding of Wood in the rich champaine Countries.

CHAP. 6.

Of Plashing of Hedges, and Lopping of Timber.

HAving already sufficiently in the former Chapter spoken of the planting of all sorts of quicksets, it is meete now that I shew you how to order the hedges being growne, and come to perfection. Know then that if after your Hedge is come to sixe or seven yeeres of age, you shall let it grow on without cutting or pruning, that then although it grow thicke at the top, yet it will decay, and grow so thinne at the bottome, that not only beasts but men may runne thorow it, and in the end it will dye, and come to nothing, which to prevent, it shall bee good once in seven or eight yeeres to plash, and lay all your Quick-set Hedges, in which there is much fine art, and cunning to be used. For this plashing is a halfe cutting or deviding of the quicke growth, almost to the outward barke, and then laying it orderly in a sloape manner, as you see

What Plashing is.

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a cunning hedger lay a dead Hedge, and then with the ſmaller, and more plyant branches, to wreath, and binde in the tops, making a fence as ſtrong as a wall, for the root which is more then halfe cut in ſunder, putting forth new branches, which runne, and entangle themſelves amongſt the old ſtockes, doe ſo thicken, and fortifie the Hedge, that it is againſt the force of beaſts impregnable.

How to Plaſh.

Now to give you ſome light how you ſhall plaſh a Hedge, though divers Countries differ diverſly in theſe workes, yet as neere as I can I will ſhew you that which of the beſt Husbandmen is the beſt eſteemed. Firſt, for the time of yeere eyther *February* or *October*, is paſſing good, and the encreaſe of the Moone would likewiſe be obſerved.

The time of yeere.

The tooles.

For the tooles which you ſhall imploy, they would be a very ſharpe nimble Hatchet, a good Bill, and a fine pruning knife. Now for the worke you ſhall enter into it, firſt with your Bill you ſhall cut away all the ſuperfluous boughs, and branches which are of no uſe, or hinder your worke, and then finding the principall ſtemmes which iſſue from the maine root, you ſhall within a foot or leſſe of the ground with your Hatchet, cut the ſame more then three quarters thorow, ſo as they may hang together by nothing but the outward barke, and ſome part of the outward ſap, and this ſtroke muſt ever be ſloape-wiſe, and downeward: then take thoſe mayne bodies of the Quicke-ſet, ſo cut, and lay them ſloape-wiſe from you, as you would lay a dead Hedge, and all the branches which extend from thoſe bodies, and would ſpread outwardly, you ſhall likewiſe cut as is before ſaid, and fould them artificially into your hand, and ever within a yard of two diſtance, where a prety Plant growes ſtraight up, you ſhall only cut off the top equall with the height of your Hedge, and ſo let it ſtand as a ſtake, about which you ſhall fold, and twind all your other branches. Now when you come to

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the top of the hedge, which would commonly not be above five foot high, you shall take the longest, youngest and most plyant boughs, and cutting them as aforesayd, gently binde in the tops of all the rest, and so make your hedge strong, and perfect: and herein is to be noted, that the closer, and thicker you lay your hedge (so there be nothing in it superfluous) the stronger, and better lasting it will be. Many use not to bind in the tops of their plasht hedges, but onely to lay the Quick-set, and no more; but it is not so husbandly, neyther is the hedge of any indurance: many other curiosities there be in the plashing of hedges, but this which I have already shewed, is sufficient both for the Husbandmans benefit, and understanding.

The profit of Plashing.

The profit which ariseth from this labour, is the maintenance, and defence of fencing, the preserving, and encrease of Quick-set, and a continuance of amity amongst neighbours, when one lives free from offending another. It yeildeth a good Mast for Swine, and with the overplus thereof at these times of plashings, repaireth all a mans dead hedges, and brings good store of fewell both to the Brew-house, Kitchin, and Bake-house.

The lopping of Timber.

Next to the plashing, is the lopping of Timber-Trees, which in those Countries which are bare, and naked of Wood, is of much use, and though I cannot much commend it, because it oft marreth the bodies of Trees, yet I must allow it for necessary, because it is a needfull rate, which the Trees pay to their Planters.

What lopping is.

This lopping, or heading of Trees, is the cutting off of the armes, and uppermost branches of Trees, and suffering the body to grow still, and it may very well be done once in eight or ten yeeres, eyther at the beginning of the Spring, or at the end of the Fall; as you shall have occasion to use the Wood, and immediate after the Moone hath new changed.

The season for lopping.

Now

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Now for the manner of the worke, there is small curiosity to be used therein, if your Axe be good, and sharpe, for you shall but cut off the armes, and boughs, smooth, and cleane without nickes, rifts, or gutters, or any thing which may receive wet, whereby the Tree may be cankred, and spoyled. Also in cutting away of the armes, you shall have a great care rather to cut them away (if it be possible) upward then downeward, least when you cut them downeward the waight of the arme suddenly falling downe, rive, and teare the barke of the body of the Tree, which is dangerous, and hath beene the spoyle of much Timber: which to prevent, you shall ever before you strike any blow above, make a good large nicke underneath, and then after cut it downe from above, and so the Tree shall receive no hurt. Also you shall observe to cut the armes close by the body of the Tree, and never to desist till you have made the place as plaine, and smooth as may be, for to doe the contrary, is neyther workmanly, or the part of any good husband. And thus much touching the plashing of Hedges, and lopping of Trees. How you shall lop Timber.

Chap. 7.

Of pasture grounds, their order, profit, and generall use.

HAving already sufficiently entreated of errable Grounds, Gardens, Orchards, and Woods of all kinds, I thinke it most meete (as falling in his due place) here to write of Pasture grounds, which are of two kinds: the first, such Pastures as lye in Wood-land, mountainous, or cold climes, and are enclined to hardnesse, and barrennesse, and therefore only imployed to the breeding, and bringing forth of Cattell: the other such as lye in low, warme, and fruit- Diversities, and use of Pasture.

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fruitfull soyles, and are most fertile, and abundant in encrease, only imployed to the fatting, and feeding of Cattell.

Of barren Pastures.

And now to speake of the first sort of Pasture, which being somewhat barren, is preserved for breeding, you shall understand that it is generally disperced over all this Kingdome, and particularly into every Country, for according to the veines, and mixture of the earth, such is eyther the richnesse or poverty of the same, and of those severall mixturs I have spoken sufficiently before in that part of this Booke, which entreateth of errable ground. Then to proceed to my purpose, it is the first office of the Husbandman when he seeth, and knoweth the nature of his earth, and perceiveth from perfect judgment that it is of very hard encrease, which as the temper, and mixture of the soyle assures him, so also he shall better confirme by these few signes, and characters, which I will deliver: as first, if he see grasse slow of growth, and that no spring will appeare before May, If instead of Clover-grasse, Dandylion and Honysuckle, you see your ground furnished with Peni-grasse, Bents, and Burnet. If you see much Knot-grasse, or Speare grasse, or if you perceiue the scorching of the Sun burne away the grasse as fast as the raine had brought it forth: or if you find quaries or stone neere unto the upper swarth of grasse; or if your ground bring forth Lyme, Bracken, Gorse, Whynnes, Broome, Bilbury, or Strawbury; or if your ground be morish, full of quick-myers, mossie or full of blacke-Flint, any of these signes make it to be most apparant that the soyle is barren, and of hard encrease.

Signes of barrennesse.

Bettering of soyles.

And then as before I sayd it is the Husbandmans first office to provide for the bettering, and perfecting of his earth, which he shall doe in this sort. First, if he perceive that the barrennesse of his ground proceeds from want of good Plants, as from want of Clover-grasse, Dandylion, Honisuckle, Cowslop, and other sweet flowers, then

Sowing of good seed.

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then he ſhall repaire into the fruitfull Countries, and there buy the Hay-ſeeds, and ſweepings of Hay-barne-flowers, which he ſhall every ſpring, and fall of the leaſe, ſow, as thin as may be, upon ſuch Paſtures, as he ſhall eyther lay for Medow, or preſerue for the latter ſpring, after Michaelmas. But if he reſpect not the goodneſſe of graſſe, but the abundance of graſſe, as thoſe husbands doe which live in or about great Cities, then he ſhall dung thoſe grounds which he will lay for medow at Candlemas; or thoſe which he will graſe or eate in the firſt beginning of the Spring, at Michaelmas before, with the oldeſt, and rottenneſt meanure he can get, of which the beſt is the rotten ſtaddell or bottomes of Hay-ſtacks, or for want of it the meanure of Horſe-ſtables, ſweepings, and ſcowrings of yards, and barnes, the mud of old ditches, or elſe good Oxe or Cow meanure, any of which will bring forth abundance of graſſe.

For abundance of graſſe.

Yet thus much I muſt aduertiſe the Husbandman, that this meanuring of Paſture-grounds carries with it divers imperfections, for though it occaſion abundance of graſſe to grow, yet the Medow or Hay which comes thereof, is ſo ranke, loggy, and fulſome in taſte, that a beaſt taketh no joy to eate thereof, more then to hold very life, and ſoule together. Alſo the graſſe thus meanured which you intend to graſe or eate with you Cattell, is by meanes of the meanure ſo looſe at the root, that Cattell as they bite plucke up both the graſſe, root, and all, which being of ſtrong, and ranke ſent in the mouth of a beaſt, maketh him loath, and caſt it out againe, and ſo not ſtrive to eate to be fat, but only to maintaine life.

The imperfection of meanure.

Now if your ſpring be ſlow, and late in the yeere before your graſſe will appeare above ground, it is meet then that you encloſe your ground, and not only maintaine the fences with high, and thicke Quick-ſets, but alſo with tall Timber-Trees, whoſe ſhade, and ſtrength may defend many cold blaſts from the earth

To helpe a ſlow Spring.

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and adde unto it a more naturall warmneſſe than it had before, for it is only the coldneſſe of the ſoyle which makes the graſſe long before it grow. Alſo in this caſe it is meete that you ſay (as the Husbandman tearmes it) all ſuch Paſture as you intend to graſe at the ſpring following, in *November* before, and ſo not being bitten from that time till *Aprill* following, no doubt but your ſpring will be both good, and forward. There be others which helpe their ſlow ſpringing grounds by ſtocking them in the latter end of the yeere with great abundance of Sheepe, who although they bite neere to the ground, and leave little graſſe behinde them, yet they ſo tread, and meanure it with their hot meanure, that it will ſpring after it commeth to reſt, much more early, and faſter than it was wont. So that to conclude in a word, to make a barren ground ſpring earely, is to keepe it warme, let it have long reſt, and meanure it well with Sheepe.

To helpe Knot-graſſe, and Speare-graſſe.

If your ground bee troubled with Knot-graſſe or Speare-graſſe, it is a ſigne of too much cold moyſture in the Earth, and in this caſe you ſhall with a great common Plough, made for ſuch a purpoſe, turne up great furrowes thorow your ground, and make them ſo deſcend, and fall one into another, that not only the moyſture bred in the Earth, but that which falls upon the Earth, may have a ſwift paſſage from the ſame, and ſo your ſoyle being drayned, and kept dry, all thoſe weedy kinds of graſſe will ſoone periſh.

To helpe Sun-burning.

If your ground be ſubject to the ſcorching or burning of the Sunne, then you ſhall underſtand that it is directly contrary to the laſt ſoyle we ſpake of: for as that by too much moyſture is made barren by cold, ſo this by too much want of moyſture is made barraine with heate: wherefore the Husbandman ſhall in this caſe draw all his draynes, to bring moyſture into his ground, which ſometimes watring, and ſometimes over-flowing the ſame, will in the end bring it

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to a reasonable fertility, for it is a rule, that where there may be overflowes, there can seldome be any hurt by Sunne-burning, unlesse that such soyles be upon Lime-stome ground, or neere unto other quarries of hard stone, which lying neere unto the upper swarth of the grasse, doth so burne the roote, that the upper braneches cannot prosper. In this case the bringing in of water doth rather hurt then good, wherefore your best course is partly by your owne industry, and partly by the labours of others, who are traded in such commodities, to let forth your ground to Stone-diggers or Lime-makers, who digging the quarries out of the Earth, and then filling up the empty places with rubbish, and other Earth, the soyle will in short space become as fruitfull as any other, for it is only the want of taking roote; or the burning up of the roote, which makes this kinde of Earth barraine. *To helpe quarries of stone.*

Now if your ground bring forth Ling, Braken, Gorse, Whinnes, or such like: you shall pare off the upper swarth of the Earth, and lay it in the Sunne to dry, in the height or heate of Summer, and being thorowly dried, you shall lay them in round hollow heapes one sod over another, then putting fire unto them, burne them into ashes, which done, spread the ashes, like a meanure, over all the ground, and you shall see those weeds will no more spring or grow in that ground. *To helpe Ling, Braken, &c.*

If your ground be morish or full of quicke myers, you shall then by small draynes or trenches draw away the water, and turne it into some lower ditch or current, and so bringing the ground to a stability or firmenesse, there is no doubt but fruitfulnesse, will presently follow after. *To helpe morishnesse or quicke-myers.*

Lastly, if your ground be mossie, and bring forth in stead of grasse only a soft fussie, and unwholsome mosse, your only best way to cure the fault, is in the Winter time to tread it much with the feete of Cattell, as by ma- *To helpe mossinesse.*

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king of Hay-ſtacks in divers parts of ſuch ground, and ſo to bring your Cattell about the ſame, and ſo yeerely altering the places of your Stacks or Reeks to goe over all your ground, and without doubt the treading of the ground will kill the moſſe, and the meanuring of the Cattell, and the expence of Hay-ſeeds upon the ground, will ſoone bring the Earth to much fruitfulneſſe, and goodneſſe.

The generall uſe of barraine grounds.

Now for the generall uſe of theſe barraine grounds, it is to be underſtood, that albe by the meanes before ſhewed, they may be helpt or bettered, yet they are but only for breede or encreaſe of Cattell. Whether the grounds be ſeverall, and encloſed, or univerſall, and common whether they be Woods, Parks, or Paſtures, or Heaths, Mores, Downes, or other wild, and unlimitted places, and theſe grounds ſhall be devided into three parts, the firſt, and moſt fruitfulleſt lying loweſt, lying neereſt to the River or ſome running ſtreame, you ſhall preſerve for Meddow, and not ſuffer any beaſt to bite upon the ſame from *Candlemaſſe*, untill the Hay be taken from the ground. The ſecond part, you ſhall graſe or eate from *Candlemaſſe* till *Lammas*, which would bee that which lieth moſt plaine, and bleake, and moſt ſubject to all weathers. And the third part, which is the warmeſt, and ſafeſt, you ſhall graſe from all *Hollantide* till *Candlemaſſe*, and betwixt *Lammas*, and all-*Hollantide* you ſhall eate up your eddiſh or after crop of your Meddows.

What Cattell are to be bred.

Now whereas I ſpeake generally, that theſe barraine grounds are for the breede of Cattell, yet you ſhall underſtand me particularly, as namely, what Cattell for what ſoyle, for every barraine Earth will not bring forth Cattell alike, as ſome will beare a faire Cow or Oxe, yet but a little Horſe: and ſome will bring forth a very goodly Horſe, yet but a very little horned beaſt, therefore you ſhall obſerve that if your ground lye any thing

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thing low, or be ſubject to much moyſture, and ſo not extreamely barraine, but although the Spring be late, yet after it ſpringeth, it yeildeth a reaſonable bit, this ground is fitteſt to breed Cattell upon, as Cow, Oxe, and ſuch like: but if it lye high, and dry, if it be ſtony or Mountainous, have much reflection of the Sunne: or though it be ſomewhat more barraine than the former Earth, and in the beſt part of the Spring yeilde but a ſhort, yet ſweet bit, this ground is fitteſt to breed a faire, and large Horſe upon: but if it be extreamely barraine cold, and moyſt, ſtony or moſſie, ſo it be repleniſhed with any good ſtore of underwood, than it is fit to breed ſmall hard Nags upon, or Geldings of a meaner ſize. Goats, wild-Swine, or ſuch like. And laſtly, if it be extreame barraine, cold, and dry, and altogether without any kinde of ſhelter, but ſubject to every blaſt whatſoever, this ground is fit only to breede Sheepe upon, as we ſee by daily experience in the ſeverall parts of this Kingdome: ſo that to conclude, you ſhall beare in your memory, that where you breed your beſt, would be reaſonable bit: where you breede your Horſe good ayre, and warmth, and where you breed your Sheepe, there much ſpaciouſneſſe of ground. And thus much briefly for the nature, and uſe of your barraine grounds.

Now to proceede to your fruitfull, and rich grounds, whoſe very encreaſe, and aboundance of graſſe, without any other curious relation ſhewes their fertility, there is little obſervation to be held in the ordring, and diſpoſing of them, for being naturally good of themſelves, there needeth little art to the maintainance of the ſame. only to have an eſpeciall care to the fencing, and ſafe keeping of them, to the due time of eating them with your Cattell, and to obſerue a fit proportion of reſt for them, in which they may grow, and gather head for the maintainance of ſuch beaſts as ſhall feede upon them. And to theſe, as an eſpeciall rule above the reſt, muſt be added a carefull diligence not to over-ſtocke Of fertill grounds.

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or load your ground with more Cattell then it may conveniently beare, for if your ground be never so fruitfull, if it be over-preſt with multitudes of Cattell, it cannot by any meanes yeild you the profit of your expectation, but returne you loſſe, and dammage.

The diviſion of rich ground.

Theſe fruitfull, and rich grounds would be devided into two parts, the one paſtures or grounds for continuall feeding or nouriſhing of Cattell all the yeere, the other meddows, from whence you ſhall gather your Winters proviſion of Hay, for the preſervation of your Cattell, which are eyther for labour or ſale in the Market, and of theſe two parts I will ſpeake ſeverally.

The generall uſe of rich ground.

Yet before I begin to ſpeake largely of them, it is meet you know the generall uſe of theſe rich, and fruitfull grounds, which is indeed the feeding or fatting up of Cattell, eyther for food in your owne houſe, or for ſale in the Market, to the Butcher, Drover, or men of ſuch like place or profeſſion. For indeed to breed much upon theſe rich grounds, is neither profitable to the Husbandman, nor is the beaſts ſo bred, either ſo comely or Market-able, as thoſe bred in the harder ſoyles, as we may note in our experience, if we will ſurvay the breeds of Cattell in *Gloſter*-ſhire, *Somerſet*-ſhire, and *Lincoln*-ſhire, which for the moſt part are bred upon exceeding rich, and fertile ground: yet if we take view of them, we ſhall finde that albe they are tall, and large, yet they are of ſlender ſhape, leane-thighed, crumple-horned, and oft tender, and dry skinned, which is a fault very note-worthy amongſt Graſiers, and indeed are nothing ſo eyely, and Market-able, as thoſe beaſts are which are bred in *Yorke*-ſhire, *Darby*-ſhire, *Lanca*-ſhire, and ſuch like, all which are bred upon hard, and barren grounds, yet have goodly, large, and round bodies, cloſe truſt, thicke, and well coupled together, faire heads, velvet skinnes, and as the Proverbe is, are ſo beautifull in horne, and haire, that

that they are every mans money, in every Market. So that I conclude, that albe upon the rich ground you may breed good Cattell, and it is necessary also so to do for the maintenance of stocke, yet the generall use, and that which is the greatest profit to the English Husbandman, is to grase, and feed the same.

Of Pastures, and ordring them.

Now to proceed to my former purpose, touching that part of rich ground which I call Pasture, because it is only for feeding, you shall first provide that they be very well fenced, according to the nature of the Country, either with ditch, pale, rayle, dead-hedge, or quicke-growth: you shall also see that they be well stored with water, that is sweet, and wholsome, for putrified water breedeth many mortall, and infectious diseases amongst Cattell. These Pastures must ever be your highest ground, and such as lie safest from inundations. Those Pastures which you lay or give rest to from the beginning of November, you may feed at Candlemas following with heilding beasts, or such as are but beginning to feed, but with your fat beasts not till our Ladies day after: those Pastures which you lay or give rest to at Candlemas, you may very well feed at May following: those which you give rest to at May-day, you may feed at Midsummer, for then the spring is swift, and plentifull: those you lay at Midsummer, you may feed at Lammas, and those you lay at Lammas, you may feed in October, and generally all the Winter following: only you shall observe, that those pastures which lye most in danger of water, or any other casualty, be first eaten, least by too long delaying an unseasonable time come, and so you be both prevented of your hope, and profit.

Manner of feeding of Cattell.

In the eating of your Pasture grounds, are many things to be observed, as first for the feeding of your fat Cattell, you must by all meanes be sure that they have full bite, which is to say, length of grasse: for Cattell, whose tongues are the principall gatherers up of

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of their food, neither can nor will bite neere unto the ground, except it be extreame hunger which compels them, and then they take little joy in their food. Next you shall oft (as any fit occasion will giue you leave) remove, and shift them into fresh grounds, and not expect that they should eate your grasse downe to the bottome, but only as it were scum, and take the uppermost, and choysest part thereof, and so they will feed both swiftly, and throughly: and for that grasse which they shall leave behind them, you shall eate it up after them with your labouring or worke-cattell, and lastly with your sheepe. It is very good also amongst your fat beasts ever to have a leane horse or two: for your fat beasts taketh delight to feed with them, and sometimes to bite after them, there being as it were a kind of sympathy or liking of each others tasts. After your grasse is fully knit, and hath received his whole strength, which will be at *Midsummer*, then you may suffer your fat beast to eate a little neerer unto the ground till after *Lammas*, because there is an extraordinary sweetnesse therein, springing from the heate of the Sunnes beames only. These few obseruations well kept, there is no doubt but your Cattell will feed well to your contentment, then when you see that they are sufficiently fed, according to the ayme of your purpose, whether it be for the use of your houshold, or the use of the Market, you shall forthwith imploy them accordingly, for it is both the losse of time, and money, not to put them off by sale or otherwise, so soone as they are come to the end of your desire. For these rich grounds will sometimes make two returnes in the yeere, sometimes three, which is a great profit. And I have heard sometimes of foure, but it is very rare, and the Cattell so returned must be very well stricken with flesh before they be put unto feeding, but if your ground will returne leane beasts fat twice through the yeere, it is commodity sufficient.

Now

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Now becauſe it is not ſufficient to ſay ſell, or kill your Cattell when they are fat, except you have the art, and skill to know the ſame, you ſhall obſerue theſe few rules following, and they will ſufficiently inſtruct you in the ſame. First, when you ſee your beaſt in the generall ſhape, and compoſure of his body ſhew moſt faire, and beautifull, each member being comely, and each bone covered, in ſuch ſort as a perfect ſhape requireth, as no eye is ſo ſtupid as cannot tell when a beaſt looketh well or ill-favouredly, you ſhall then gueſſe the beaſt to be well fed, eſpecially when you ſee his huckle-bones round, and not ſharpe, his ribs ſmooth not rough, his flanks full, his natch thicke, and his cod round. This when you ſhall perceive, you ſhall handle him, and griping him upon the neathermoſt ribs, if you feele the skin looſe, and the ſubſtance ſoft under your hand, you may be well aſſured that the beaſt is well fed outwardly, that is upon the bones. You ſhall then lay your hand upon his round huckle-bones, and if that feele, under your hand, ſoft, round, and plumpe, you ſhall be aſſured that the beaſt is well fed both outwardly, and inwardly, that is, both in fleſh, and tallow: then you ſhall handle him at the ſetting on of his taile, and if that handle bigge, thicke, full, and ſoft, it is a true ſigne that the beaſt is very well fed outwardly: then handle his natch-bones which are on both ſides the ſetting on of his taile, and if they feele ſoft, and looſe, it is a ſigne that he is well fed both outwardly, and inwardly. Laſtly, you ſhall handle his cod, and navell, if it be of an Oxe, and the navell only if it be a Cow, and if they handle thicke, round, ſoft, great, and plumpe, it is a moſt aſſured ſigne that the beaſt is very well tallowed within. And thus when any of theſe parts or members ſhall handle in contrary manner, you ſhall judge of the contrary effects. And thus much touching the knowledge of a fat beaſt. How to know a fat beaſt.

Now for the ſecond part of theſe rich grounds, which Of meddows, and their ordring.

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are Meddows, they ought to be the most fruitfullest, and richest of all other, lying low, and levell, and being now, and then in the Winter season washt with inundations, yet not too too much drenche or washt with the same: for as the moderate overflowing of waters enricheth, and fertiles the soyle, so the too much soking or long resting of the water rotteth the earth, and bringeth it to barrainnesse, neyther is it altogether necessary that every Meddow should ly so low that it might be overflowed, for there be some high grounds which are free from those floods which will beare Meddow in very sufficient manner, and although the lower Meddows doe abound in the plenty of grasse, yet the higher grounds ever beare the sweeter grasse, and is acceptable amongst Husbandmen, than the low Meddows do till, but the high Meddows do feede: the low are for the Stable, but the high are for the Cratch, and that which is long will maintaine life, but that which is short will breed Milke.

Preseruation of Meddows.

The chiefest respect you shall have to your Meddows, is to defend, & preserue them from Moales, and such like vermine, which roote up the earth, and destroy the sweet, and tender roots of the grasse. Next, that you shall note in what places of the Meddow the water standeth longest, and from thence, by small furrowes, or draynes, to give it a free passage, so that the Meddow may as it were cleanse, and be dry in one instant. Lastly you shall maintaine the bankes of all such dyches, and other fences bordring about your Meddows in good, and sufficient manner, both for keeping out of water after your Meddows begin to grow, as also for keeping Cattell from eating them in the night or other times, which is a great deprivation, and losse of the profit you expect to come from them: for you shall understand, that if any overflow shall come unto your Meddows after *May*, it will leave such a sandy filthinesse in the grasse, that except

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cept very moderate showers fall swiftly, and sodainly, to wash it out againe; the Hay which shall be got of that crop, will both be unsavory, and unwholsome, and breed in your Cattell many dangerous, and mortall sicknesses.

The best times for laying of Meddows to rest, is, if the Meddow lie high, as in up-land Countries, or if the soyle be cold, or the springing thereof slow, at *Candlemasse*: but if the ground be more warme, temperate, and of some more fertility, then you may lay it at our Ladies day in *March*: but if the ground be most fruitfull, then if you lay it at *May* day, it will be early enough. Also in the laying of your Meddows to rest, you shall consider the state of the ground, as whether it be eaten neere and bare, and with what Cattell, as Horse, Oxen, or Sheepe: if it have beene eaten bare with Oxen or Horse, then you shall lay it earlier in the yeere, for it will aske a longer time to grow againe: but if it have beene eaten with Sheepe (although they bite nearest to the ground) yet you may lay it so much later, because the meanure which they bestow upon such good ground, will quickly hasten on the Spring: but if your Meddows have not beene eaten bare, but have a good deepe fogge upon them still, then you may lay them the latest. Also in the laying of Meddows, you shall consider whether they be common or private, if they be common Meddows, and that no old custome bind you to the contrary, you shall lay them to rest earely in the yeere, that recovering a forward Spring, you may cut them so much the sooner, and so have the better after-crop, and the longer time to eate it: but if your Meddow be private, and at your owne particular disposing, then you shall lay it according to your owne necessity, and the goodnes of the soyle, observing ever to give it full time of growth, and not to cut it till the grasse bee full ripe, for it is better to let it grow a weeke too long (so the weather be seasonable for the withering of it) then

When to lay Meddows.

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to cut it two days too soone because when it is to earely cut, it not only looseth the strength, and goodnesse, but also the substance, and waight, and in the drying shrinketh, and wasteth to nothing.

When to mow meddows.

Touching the fittest time to cut or mow your Meddows: If they be laid in a due season, it is held of all the best English Husbandmen generally to be a weeke or a fortnight after *Midsummer* day, as namely about the translation of *Thomas*, which is ever the seventeenth day of *July*, and without question it is a very good time for all men to begin that labour, if their grounds be fruitfull, and of earely growth: but in as much as divers grounds are divers in their growth, some being much more hasty than other some: and for as much as some Meddows may as well grow too long as too little a time, as in high land Countries, where the heate, and reflection of the Sunne will burne, and consume away the grasse, if it be not gathered in a due season; I would therefore wish every good Husbandman about a weeke before *Midsummer*, and a weeke after, to view his Meddows well, and if he see them turne browne, if the Cock-heads turne downeward, and stand not upright, if the Bels, and other vessels of seede open, and shed their seeds, if your Honisuckles have lost their Flowers, and the Penigrasse be hard, dry, and withered, then you shall truely understand that your Meddow is ripe, and ready to be mowne, and the longer it standeth, the more it will loose of the substance, and when any of the contrary signes appeare, as when the Meddow lookes greene, and fresh, the Cock-heads looke upright, the Bels are close, and hard; the Honisuckles flowring, and purple, and the Penigrasse soft, and moyst, then is your Meddow not ready to cut, nor will the Hay that is so gotten be other then soft, fuzzie, and most unwholsome, no beast taking delight to eate of the same.

The inclination of the weather.

Now to these considerations, you shall adde a careful obseruation.

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observation of the state and inclination of the weather, and if you finde that the weather is disposed to much wet or incertainty, then you shall forbeare to mow, because that moysture will still maintaine, and hold the grasse in his perfect strength so long as it groweth: but if it be once cut downe, then the wet will soone rot, and spoile it: but if you finde the weather enclined to drought, and faireneſſe, then you shall with all speede cut downe your Hay, for one loade got, and brought into the barne without raine, is worth two that hath beene washt, though but with the smalleſt shower. There be some Husbandmen that in the mowing of their Meddows, will obserue the state of the Moone, and other planetary conjectures, but they are fitter for those which seeke curiosity more then profit, for mine owne part I would wish every good Husband but to know truly when his crop is ripe, and then to gather it in the most constant, and faireſt seasons, which the rules already set downe will most amply shew him.

Now for the manner of mowing your Meddows, although the generall act resteth in the hands of the mower, and that it is hard, and impossible, in words, to expresse the art of the action, nor is it needfull that every Husbandman be a mower, yet for those rules which the English Husbandman should know, and obserue, I will in no sort omit them. You shall then know that in the mowing of your medows you shall mow them smooth, plaine, and levell, and as the Husbandman tearmes it, with such an even board, that a man may no more but discerne the going in, and comming forth of the Sythe: and this shall be done so close, and neere unto the ground, as is possible for the worke-man to get, especially if it bee in publique, and common Meddows, because the swap, and first crop is all the maine profit you can challenge your owne: nay, you shall doe it also in your owne private, and severall Med-

The manner how to mow Meddows.

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dows: for although an ignorant cuſtome hath drawne ſome of our Husbandmen, to ſay, and beleeve that there is no loſſe in the ſleight, and inſufficient mowing of private Meddowes, becauſe ſay they, what I looſe in the Barne, my Cattell finds on the ground, yet they are much deceived in that opinion, for what they ſo leave on the ground halfe eat halfe uneat, is no good food, neither pleaſant nor ſavoury, but dry, hard, and bitter, and indeed no better then ſower fogge, which may fill, but cannot nouriſh, and who then will be ſo ſimple, as not to preferre ſweet Hay before ſuch unſavoury graſſe? therefore be carefull to mow your graſſe even, and cloſe by the ground, for it will make the freſh graſſe ſpring up with more eaſe, and be much pleaſanter in taſte.

How to make Hay.

Next after the mowing of your Meddowes followeth the making of your Hay, which is a labour that muſt be followed with great care, and diligence, for it is an old ſaying, that dearth beginneth at the Hay-barne doore, and he that is negligent in that, can hardly be good husband in any thing elſe, then to ſhew you how you ſhall make your Hay, you ſhall firſt underſtand that no one particular forme can ſtand for a generall rule, becauſe Hay muſt be made according to the nature of the graſſe, and the ſoyle where it groweth, ſome being apt to wither, and make ſoone, as that graſſe which is fineſt, and hath in it leaſt weeds, others will be long in making, as that which is full of thicke, ſtrong, and ſower graſſe, many weeds, bunnes, and ſuch like hard ſtalkes, which are not eaſily dryed, therefore it is the part of every good Husbandman, eyther by his eye, and knowledge to judge of the nature of his graſſe, or elſe to follow the cuſtoms of the Country, and ſoyle wherein he liveth, but the firſt Knowledge, is the better Science. But to proceed to my purpoſe, I will in the natures of two ſorts of graſſe, the one fine, and the other courſe ſhew you the generall making of all ſorts of Hay.

Firſt,

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First, then for the making of your fine rich grasse into Hay if it grow in great abundance, thicke, and close, and so lieth in the swath, you shall have one with a Pitchforke to follow the Mowers, and to spread, and throw the grasse thin abroad, that the ayre, and Sun-beames may passe thorow it: and this is called in most Countries tedding of Hay. The next day, after the Sunne hath taken the dew from the ground, you shall turne that which the day before you tedded, and then if you have any more new mowen, you shall ted it also. The next day following, as before, when the dew is from the earth, you shall turne your Hay againe, and so letting it lie till the Sunne be at his height, begin to fit it againe; at which time if you finde it reasonably well withered, you shall then draw it into windrows, that is, you shall marke which way the wind standeth, and the same way that it bloweth, the same way with Forks, and Rakes one after another, gather in the Hay into long, great, thicke sowes: then your shall make those windrows into large Cockes, of which the biggest is ever the best, for they will defend themselves from raine, if happily any shall fall, whereas the little small Cocke lying light together, taketh in the raine like a spunge, and so make the Hay a great deale worse then otherwise it would be: when your hay is thus set in safe Cocke, you shall let it rest a day or two, that it may take a little sweat therein, which will make the Hay wondrous pleasant, and sweet; then when the Sunne is gone up to a pretty height, you shall open those Cocks, and after the Sunne and wind hath passed thorow them, you may if the grasse be cleane, and fine of it selfe, without ranke grasse, load it, and carry it either into the Barne, or such other place, as you have appointed for the receit thereof: but if it have any ranke grasse, which you see unwithered amongst it, then you shall make it up againe into safe cocks, and so let it rest a day or two more before you lead it away. And thus much for the making up of fine Hay. Now

To make fine Hay.

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To make course Hay,

Now for the making of course grasse into Hay, which you must suppose to be grasse growing in cold, moyst, woody, and barraine grounds, full of weedy, rough, and stumpy hearbage, long in growing, late ere it can be gathered, and therefore deprived of much of the Sunnes strength, to sweeten, and wither it. This grasse as soone as it hath beene mowen, and tedded, as beforesaid: the next day you shall make it into little grasse cocks, as big as little Meale-hils, and so having laine a day or better, then breake them open, and let them receive the Sunne, and wind, for they will heate, and sweat a little in the grasse, which makes it Hay the sooner, and better: then after the Sunne hath spent all his power upon it, you shall make it up into little cocks againe putting two of the first cocks into one, then having so layne another day, breake them open againe, and give them the Sunne: then make them up againe, and put three or foure of those cocks into one, and so let them lie another day, then breake them open as before if the Sunne shine faire, and as even make them up againe, putting three or foure of those cocks into one, and so every morning after the Sunne is up breake them open, and at evening make them up againe, till you find that the Hay is sufficiently well dryed, and sweateth no more in the cock: but in the morning when you breake it open it is dry, without steame, smoake, or vapour arising from it, which both your hand, and eye may perceive in the first stirring or moving, and then you may at your pleasure lead it home, and house or stacke it as you shall have occasion.

Use of Hay for Cattell to breed or labour with,

Now for the use of Hay, it is two-fold, that is, either for the maintenance of breeding Cattell, or Cattell for labour, or else for the feeding of Cattell for the Market, or for slaughter: for the maintainance of breding Cattell, or the Cattell which are employed for the Plough or other labours, whether it be draught or travell, you shall make choyse of the sweet, and well-dryed Hay,

well

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which is of freſh, and greene colour, well withered, ſound, and perfect Hay, though it be long, loggy, and not exceeding much ſweet, it matters not for being well Inned, and dryed, it will ſerue ſufficiently for thoſe purpoſes: and with this Hay to mingle ſometimes Wheate-ſtraw, Rye-ſtraw, Barly, or Oate-ſtraw will not be amiſſe for heilding, or breed, Cattell, but for worke-beaſts, except neceſſity conſtraine, let them have Hay ſimply of it ſelfe, during the buſie time of their worke, but when they reſt, you may uſe your diſcretion. For the time of giving Hay or foddring to ſuch Cattell as are in the houſe, the beſt is in the morning before they goe to labour, in the evening when they come from labour, preſently after then drinke, and at night when you goe to bed. But for thoſe Cattell which goe abroad, as Sheepe, heilding beaſts, and ſuch like, to fodder them morning, and evening, is out, and out fully ſufficient.

Now for the uſe of Hay for fat Cattell, you ſhall make choyſe of the fruitfulleſt, ſweteſt, fineſt, and ſhorteſt Hay you have, being full of flowers, pleaſant, and odoriferous to ſmell on: and although this Hay be mixt with ſome roughnes, yet it is not the worſe, for though your fat beaſt make thereof great orts, yet is the loſſe not great, for thoſe orts may be given to other heilding, and hungry Cattell, which will eate them with great eagernesſe. This Hay would in the firſt gathering not be withered too ſoone but ſo ſtackt-up with a little harty greenneſſe that it may a little mow-burne, and alter the colour to a reddiſh brownnes, but by no meanes ſo moyſt that it may mould, rotte, or putrifie, for that is fulſome, and vild, but only alter the colour, and thereby make the ſmell ſweeter, and ſtronger. This Hay will entice a beaſt to eate, and will ſtrengthen, and inable his ſtomacke, and withall will breed in him ſuch a drought or thirſt, that hardly any water will

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quench him, and the Grazier takes it ever for an infallible signe, that when his beast drinkes much hee feeds fast, and his tallow wonderfully increaseth. For the ordinary times of foddring your fat Cattell, if they be in the stall, and as we say, tyed up by the head, the best is in the morning before, and after water, at noone; in the evening before, and after water, and late in the night, when you goe to bed, but if they feede abroad, and take the benefit of Fogge, and after-grasse, then to fodder them Morning, Evening and high noone is fully sufficient.

Here I could speake of Pease-feeding of Sheep, Swine, and other Cattell, eyther at the Trough, Reeke, Stacke, or such like, the severall manner of cratches, fashions of stals, and many other necessary rules appertaining to this mystery; but I am against my will confined, and therefore must referre it to some other occasion, being loath to spoyle an excellent discourse, with a tale halfe tould, and imperfectly spoken: And thus much therefore of Meddows, and their severall uses.

CHAP. 8.

A new method for the husbandly curing of all manner of Cattels diseases.

The reason for this Chapter.

IF this Theame I have written a whole (or as some will suppose many) Histories, yet doubtlesse nothing too much, the cause is so necessary, and commodious: yet this I must let every Reader understand, that what I have herein formerly done, I did for a generall, and unconfoulable satisfaction to the whole Kingdome, both the learned, and unlearned, and as well to satisfie the nicest, and most curious opinion, as the simple, and playne dealing creature: whence it came that I waded artfully,

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artfully, and profoundly into the uttermoſt ſecrets of this knowledge, leaving nothing unſearcht, or unſet downe, that might any way tend to the ſatiſfaction of any iudiciall Reader, and therefore tooke liberty to make a large progreſſe, without ſparing any paynes, to make my worke abſolutely moſt perfect. But now, having only to doe with our honeſt playne Engliſh Huſbandman, who eyther cannot much read, or elſe hath little leaſure to read, at moſt but a little memory to beſtow upon his readings: I have here for his eaſe both of memory, readings, and other vexations, drawne him ſuch a method for the curing of all the diſeaſes in Cattell, as was never yet found out by any man or Authour whatſoever: and is worthy to be preſerued to all poſterities for ever, and ever.

To beginne then firſt with the Horſe, which is the Husbandmans principalleſt creature, you ſhall underſtand that he hath, of my knowledge, one hundred, and odde diſeaſes, or infirmities, beſids other hurts, and blemiſhes, for all which, I have ſeverally ſhewed ſeverall cures, as may appeare by the volumes which are much too great for any Husbandman to carry in his braynes, and therefore for his eaſe I have drawne all thoſe hundred, and odde ſickneſſes or ſorrances, into twelue, and will aſſure every Husbandman that with theſe twelue medicines following, he ſhall perfectly cure all the diſeales in a horſe, whatſoever. Horſes diſeaſes to be cured with twelue medicines.

To proceede then in an orderly manner to the cures: Every Husbandman muſt know that all diſeaſes in a horſe are inward or outward: inward as offending the vitall parts, or outward as troubling the members; to ſpeake then firſt of inward ſickneſſe, I will divide it into two branches, that is, eyther it offends the heart, or the brayne: If it offend the heart, we call them, Feavers, Yellows, *Anticor*, conſumption of Lungs, Liver, Splene, Gall or other intrals, Wormes, Fluxes, Belly-bound, and divers other of like nature: For Of inward ſickneſſe.

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The first medicine.

any or all which, you shall first let your Horse bloud in the neck-veine, and then give him during his sickneſſe, to drinke, eyther in sweet Wine or strong Ale or Beere, if Wine a pint, if Ale or Beere a quart, two spoonfuls of the powder called *Diapente*, made of *Aristolochia* root, *Gentiana*, *Myrrhe*, *Eboni*, and *Bachilawi*, of each equall quantity, and let it be well brewed together, and doe thus every Morning fasting, and let the Horse fast two houres after it.

The second medicine.

If it offend the brayne we call them *Appoplexies*, *Palsie*, *Staggers*, *Colds*, *Glanders*, *Coughs*, mourning of the *Chyne*, *Migrims*, *Dizineſſe*, and a world of such like: and the cure is to take *Assafeteda*, and dissoluing it in *Vinegar* dip hurds therein, and stop it hard into his eares for two mornings together, after you have taken from him great store of blood at his neck-veine, and then give him to drinke, during his sickneſſe, every morning a quart of *Milke*, wherein the white, and rough cankerous mosse of an old Oake pale hath beene sodden till the *Milke* grow thicke, then strayned, and so given luke warme, and if you finde that no heavineſſe or dizzineſſe appeare in his head, then you may forbeare the blood-letting, and the *Assafeteda*, but not otherwiſe, in any caſe; and thus assuredly theſe two medicines already declared will cure all the inward diſeaſes in a Horſe, whatſoever.

Of outward diſeaſes.

Now for outward diſeaſes, they are eyther naturall or accidentall: If they be naturall, they eyther grow from the generation, or breed, from whence a Horſe is deſcended, or elſe from corruption of foode, or other unwholſome keeping; If they grow from the breed and generation of the Horſe, we call them the *Vives*, *Wens*, *Knots*, or ſwellings about the *throat*: and for the cure thereof, take a pennyworth of *Pepper*, beaten into powder; a ſpoonefull of *Swines-greaſe*, the juyce of one handfull of *Rew*, two ſpoonefuls of *Vinegar*, and mixe them together, and put this equally into both the

The third medicine.

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the Horſes eares, and ſo tie them up, and ſhake the eares, that the medicine may ſinke downe, and take good ſtore of blood from the Horſes necke-veine, and temple-veines, and uſe this medicine two or three mornings together.

If they proceed from corruption of food, or any other unwholſome keeping which corrupteth the blood, then we call them *Impoſtumations*, *Byles*, *Blotches*, *Fiſtulaes*, *Polemill*, and ſuch like: and the cure is, to take the loame of an old mudde wall, ſtrawes, and all, but let there be no Lime amongſt it, and boyle this loame with ſtrong *Vinegar*, till it be like a Pultus, and as hot as the Horſe can abide it, apply it to the ſore place, and it will not only draw it to a head, and breake it, but alſo draw it, ſearch it, and heale it. The fourth medicine,

There be alſo other diſeaſes which proceed from naughty food, and the corruption of blood, and we call them *Farcies*, *Scabs*, *Mangy*, *Scratches*, *Paynes*, *Mallanders*, *Sellanders*, and all of ſuch like nature; and the cure is firſt to ſlit the hard knots, or rubbe off the ſcurſe, and make the ſore place raw: then take yellow *Arſnicke* beaten to powder, and mixe it well with freſh greaſe, and then therewith annoynt the ſore places all over, which done, tie up the Horſes head, ſo as he may not knappe or bite himſelfe, and ſo let him ſtand an houre or two; then take ſtrong old Piſſe warmd, and therewith bath, and waſh the Horſe all over, and ſo put him to his meate: and in this manner dreſſe the Horſe or beaſt three or foure mornings, and it will be ſufficient; only you muſt not fayle to take from him good ſtore of blood at his neck-veine. The fift medicine,

Now if his diſeaſe proceed from accidentall cauſes, as from *Wounds*, *Bruſes*, *Straynes*, *Galles*, hurts in the *eyes*, *excretions*, or broken *Bones*, then you ſhall to every one of theſe take theſe ſeverall medicines which

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The sixt medicine.

follow; as first, if they be wounds, in what sort soever taken or received, you shall take *Turpentine*, *Waxe*, and *Hogs-grease*, of each a like quantity, and melting them together into a salue, dresse the wound therewith, and it will heale it, how great or little soever.

The seventh medicine,

If they be bruises, whether gotten by stroake, naughty Saddles, or other rushes, from whence proceedeth many times old, putrefied, and most rankorous vlcers, you shall first if the tumor be onely swelled, and not broken, apply unto it the fourth medicine of *Loame*, and *Vinegar*, but if it be an open old rankorous vlcer, you shall take *Hogs-grease*, *Turpentine*, *Wax*, and *Verdigrease*, of each a like quantity, and being well mixt, and incorporated together, dresse the sore therewith, till it be whole, for this medicine will abate, and keepe downe any spungy or naughty dead flesh which arises, and keepes the sore from healing, and may therefore alwaies be vsed in such like cases, whether the sore be new or old.

The eight medicine.

If they be straynes eyther of joynts or sinewes, in what part or member soever it be, old or new, take strong *Vinegar*, *Patch-grease*, and *Wheat-bran*, and boyle them together till they be thicke like a Pultus, and then apply it very hot to the straine, morning, and evening, and it is a most certaine cure, and will keepe the member from growing soule, knotted, or gourded, and will also take away all swellings or paynes of the limbs whatsoever.

The ninth medicine,

If they be Galles, of what kind or nature soever, whether on the backe, limbs, or any other outward part of the body, you shall take first fresh Butter scalding hot, and with it first bath, and wash the sore, then take thicke Creame, and mixing it with the Soot of a Chimney till it be thicke like a salue, with the same annoynt the sore place morning, and evening, and it will cure it without any feare of dead flesh: if you doe strow upon the sore the powder of Rossen it will be good also.

If

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If they be any hurts in the eyes, as ſtrokes, inflamations, Pin-web, Canker, or any other miſchiefe whatſoever, you ſhall then take true ground-*Ivie*, which otherwiſe is called of ſome *Ale-hoofe*, and beating a good handfull thereof in a morter, with a ſpoonefull or two of white *Roſe-water*, or the water of *Eye-bright*, then ſtraine it thorow a cleane wet cloath, and with that water dreſſe the ſore eye morning, and evening: or if you can conveniently three or foure times a day, for the oftner is the better, and it will without all fayle cure any ſore eye in the world whatſoever, eyther of man or beaſt, or any other creature. The tenth medicine.

If they be excretion of bones, as Splents, Spavens, Curbs, Ringbones, or ſuch like, in what part or member ſoever they be you ſhall then take white *Arſnicke*, beaten or ground to fine powder, and making a little ſlit upon the head of the excretion, the length of a Barley corne, or very little more, yet in any waies downe deepe to the excretion, and then with the poynt of your knife put the *Arſnicke* upon the excretion, and ſo let the horſe ſtand with his head tied up for two houres at leaſt, for in that time the greateſt anguiſh will be gone, and then put him unto his meat, and in three or foure daies after the excretion will fall away of it ſelfe; and then with a little ſweet Butter you may cure the ſore, which will not be great. The eleventh medicine.

If they be, broken bones, or bones out of joynt, you ſhall after you have placed them in their due place, firſt annoynt them with the Oyle of *Mallows*, or for want of it with warme *Patch-greaſe*, and then clape about them a plaſter made of *Pitch*, *Roſſen*, and *Maſticke*, and ſo with ſoft, and flat ſplents, ſo ſplent the member as it may not move, and ſo let it reſt nine daies ere you dreſſe it againe, and in any caſe ſo ſling the Horſe or beaſt that he may not during that time, put his member to the ground, which a little diligence, and playne will eaſily doe. The twelfth medicine.

If

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Diseases in the feet.

If your Horse have any infirmity in his hooves as *Quitter-bone, over-reach, pricke, crowne-scabbe, rotten frush* or any such ulcerous disease, you shall first lay it open, and then heale it with the seventh medicine. But if it be foundring, fretteshing, or such like, then you shall first pare all his hooves cleane over, so thin that you may discerne the quicke all over, then let him blood at the toes, and take great store of blood from him, but in any case cut not the veine in sunder: then take the sixt medicine, and being boyling hot (after hollow shoes have beene tackt on his feet) with Flaxe hurds dipt therein, stop all the soales of his feet up hard, and thus doe twice in sixe daies, and it will bring his feet to their full perfection againe, without any great losse or trouble.

Diseases in the privy parts or for stifling.

As for the common infirmities in a Horses privy parts, which are *swellings, inflamations, incording*, and such like, you shall but only swim your Horse in cold water morning, and evening, and it is a present helpe, both for them, or the stifling of a Horse in his hinder joynts: Thus you see these twelue medicines will sufficiently cure all the diseases in a Horse or Beast whatsoever, which who so will not carry in his memory, he is worthy now, and then to be punnisht for his sloath and sometimes to suffer losse, which may make him more industrious to study for his owne good, and profit. And thus much for the cure of diseases.

FINIS.

12. 4. Suggestions – See Suggestion in Shakespeare

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